PSYCHOLOGICAL ASPECTS OF COMMUNICATION, ANXIETY AND SATISFACTION IN OBSTETRICS

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ABSTRACT

Communication, anxiety and satisfaction during pregnancy was examined. Ley (1977) presents a cognitive model to explain satisfaction and its links with understanding. Janis (1958, 1971) notes a curvilinear relationship between anxiety and post-operative coping and postulates that information, anxiety and cognitive preparation are the variables accounting for this. Kumar and Robson note that obstetric anxiety is related to concerns for maternal and infant well being rather than irrational anxiety. This study examined the experience of women, stressors, communication satisfaction, knowledge and information and looked at the extent to which these three theories could interrelate to provide a fuller explanation of the psychological experience of women. Five studies were undertaken. Initially a pilot study revealed many negative statements about communication when transcripts were analysed. Communication factors and anxiety laden instances were correlated. The next study was set up to examine knowledge levels as Ley predicts that these, together with misunderstandings could contribute to dissatisfaction. Desire for knowledge was high. Knowledge varied according to social class but not parity. Doctors felt parity would be a factor. Women had difficulty approaching their doctor for information yet still desired doctors as their primary information source. Doctors delegated much information imparting to classes. Study three examined anxiety, communications and satisfaction in labour with pain management (a noted stressor in study 1). Patients receiving Pethidine were dissatisfied. Their pain experience did not differ markedly,but their psychological preparation did. In study 4 anxiety and outcome was monitored, together with information gathering strategies. Linear, rather than curvilinear relationships were found (unlike those predicted by Janis). The course of anxiety was a useful measure and the impact of anxiety on caregivers in the cycle of communications and recovery were explored. The final study looked at the impact of intervention on anxiety and satisfaction in ante-natal care. Women were randomly allocated to groups receiving no intervention, information and information plus feedback. The latter group had significantly lower post-consultation anxiety and higher satisfaction than the other two. The role of knowledge and accuracy in relation to satisfaction was explored.

Kumar and Robsons' propositions about anxiety were supported in these studies. Ley's cognitive model contributed much to the understanding but limitations in this model are explored, especially in relation to process and interaction factors and the routes to understanding. Janis' curvilinear relationship was not upheld, but his theoretical explanations involving the use of information and worry needs further testing.

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1.1 INTRODUCTION

Pregnancy has been described as a time of "anxiety" by obstetricians (Pitt 1978). This necessitates "a great deal of care when talking to women". It seems that anxiety and communications are linked in the minds of carers. Yet neither anxiety nor communication are straightforward.

The term anxiety is not fully understood. Further it is unclear whether a) anxiety exists in pregnancy, b) its presence has a negative or positive effect or c) the presence of anxiety is predictive of other outcomes in the progression of pregnancy or the future. The nature of anxiety state is open to debate. Anxiety may be an internal reaction or a response to an external stressor. Some workers see it as positive others as negative. Anxiety may not be static over time. It may involve all of the above forms at different times. Indeed the concept may be better understood if one examines internal anxiety reactions or levels, external stressors and the interaction between external events and individuals which may result in stress.

In medical settings potential stressors relate to the nature of the condition, the implications the condition has for the lives on the individual and the medical system in which the individual is treated. Janis (1958,1971) examined the relationship between anxiety level and subsequent coping. This theory is important as if

links between anxiety state and subsequent coping exist interventions may be formulated to adjust the anxiety and thereby modify outcome.

An emerging set of literature has now focused on doctor patient communication. (e.g. Ley 1977, Ley 1982, Pendleton 1984) .This is relevant as high levels of dissatisfaction with communication have been recorded which may predispose to raised anxiety. Furthermore interventions have attempted to adjust communication variables in order to ease anxiety and promote recovery.

A review of the many studies shows some methodological weaknesses and a large catalogue of unanswered questions. This study will examine the role of communication and anxiety in pregnancy. In order to examine the interface between the two areas both anxiety and communications literature will be reviewed. This review cannot cover the whole of the literature, but it will summarise the relevant research, especially studies providing a theoretical framework from which findings can be generalised to other settings.

1.2. COMMUNICATIONS

Ley (1977,1988) noted satisfaction with many aspects of care, but expressions of dissatisfaction with communication.

Most records of dissatisfaction have resulted from global surveys assessing care in a wide range of settings. These range from in-patient (United Manchester Hospitals 1970; Parkin 1976; Reynolds 1978) to out-patient (Mayou 1976), General Practitioner visits for minor complaints (Kencey et al. 1975; Ley et. al 1975, Ley et al.

1976) to hospital stays for major surgery (Ley 1974, Reynolds 1978, Meyerovitz et al 1983. They cover a wide range of patients with minor (Winkler 1981) and major (Jones 1982, Meyerovitz 1983) medical problems, psychiatric problems (Raphael and Peers 1972) and at times the parents of patients (who themselves are not ill at the time). (Arnold 1970, Kennel 1969, De Castro 1972, Korsch and Negrete 1968) Table 1.1 sets out some of the surveys.

Hence such surveys describe a wide range of areas where dissatisfaction exists. Yet at the same time these studies are limited. It is unclear whether workers can generalise from one setting to another, one condition to another and one patient group to another. Variables such as the nature of the condition are often overlooked in subsequent interventions. Few studies examine both the level of satisfaction (or dissatisfaction) in a specific group and causes, interventions and outcome in the same group.

Despite such shortcomings, Ley, in a series of comprehensive reviews (1977,1982, 1988) has listed a variety of reasons why improving communication skills may be important. It may improve satisfaction, compliance and outcome. It may decrease anxiety and even promote recovery.

He pointed out that one of the roles of clinical psychologists "should be to apply the methods and findings of psychology to the solution of problems in the field of health care, both in its preventive and curative aspects."

TABLE 1.1 SURVEYS OF DISSATISFACTION

AUTHOR	% DISSATISFIED	STUDY
Mcghee (1961)	65%	Staff/Pt (n=490)
Hugh Jones Tanser Whitby (64)	39%	Hospital patients insufficient info (n=275)
Cartwright A (64)*	29%	Detail at right time (n=701)
Spelman Ley Jones (1966)	54%	Dissatisfied with communication
Houghton (1964)*	46%	Not able to find
(1965)*	50%	out all want to
(1966)*	35%	knowand explanations (n=551)
NHS Royal Commission (1969)*	31%	Hospital inpatients
	25%	Hospital outpatients
Raphael W (1969)	86%	Critical,not told enough (n=1348)
Korsch et.al (1968)	24%	Paediatric casualty
Arnhold et al (1970)	32%	Paediatric (n=60)
Raphael and Peers (1972)	39%	Psychiatric pts
United Manchester Hosp (70)	11%	Average (n=811)
Geersten et. al. (1973)	18%	Arthritis patients
Kincey (1975)	26%	G P outpts (n=61)
Mayou et. al. (1976)	82%	In Patients (n=40)
	65%	Out patients (n=40)
Parkin (1976)	57%	Medical hosp (n=134)
Kaella (1979)	22%	Dissatisfied
O'Brien and Smith (1981)*	25%	Unable to discuss
Berry et al. (1981)	58%	Psychiatric (n=236)
Winkler et.al (1981)	16%	Pts on anti-biotics (n=793)
Meyerovitz et al. (1983)	33%	Cancer pts (n=57)
Cartwright A (1983)	20%	G P patients (n=583)
Sanazaro (1985)	11%	Chronic pts (n=201)

* denotes reference to obstetric patients

Ley (1977) proposed five possible explanations for patients' dissatisfaction with communication.

" 1. Insufficient time
2. Patient's diffidence about asking for information
3. The belief that patients do not want to know
4. Errors arising from one member of the hospital staff wrongly thinking that another has already informed the patient
5. Reactionary attitudes on the part of the hospital staff "

If these five explanations accounted totally for findings of dissatisfaction, this implies that communication is a simple, straightforward exercise, necessitating the will to inform the patient, which if implemented would presumably remove dissatisfaction. However, Ley proposes that communication is not simple and a greater understanding of the mechanisms and possible outcomes presents a more complex phenomenon in need of perhaps a more detailed analysis. Indeed, studies which overlook the complexity of communication exhibit the insufficiency of this assumption.

Houghton (1966 and 1968) presents one of the best examples of this oversimplification of the concept of communication. Women in maternity care were surveyed only to reveal once again a satisfaction with medical care but generalised dissatisfaction with communications in two hospitals. One hospital was randomly selected

to attempt improvements in communication and the other was monitored as a control. These improvements took the form of staff undertaking to "try harder". A booklet was generated by the staff. No account of content was presented. Name tags were worn and other improvements all of which were "decided, designed and carried out by the hospital ward staff". After the intervention period the two hospitals were monitored. In the outcome analysis there was no increase in satisfaction with communiction due to intervention, but there was an increase "in the amount of dissatisfaction expressed... about aspects of care other than communication". It seems possible that the ineffective effort was carried out at the expense of medical care variables with which the patients had previously been highly satisfied, and for which there seems to have been adequate training of staff.

An unsatisfactory outcome emerged from work by Hugh Jones et. al. (1964) where efforts to "try harder" simply did not result in consistent improvement. It does seem, therefore, that 'communication' is not so simple or straightforward. Untutored efforts by staff to improve communication prove naive and ineffective. Communication therefore appears to be an aspect of care worthy of greater understanding and theory.

Communication may be viewed as a tool widely used in medicine but it is rarely formally taught. Rutter and MaGuire (1976) studied medical students' abilities to communicate with their patients. They found that communication skills were poor, and lower amounts of information emerged from interviews with poorer communication. If communication were viewed as a social skill it could be amenable to investigation and teaching. They trained doctors in interviewing

skills and on subsequent interviews found they performed significantly better than a group having experience but no focussed training. More medical information emerged during the session as well. No patient satisfaction measures were taken. Neither did they assess whether patients perceived differences when interviewed by a trained or untrained interviewer. Rutter and MaGuire note that since communication is not taught as a formal skill in medical schools, generally, the usual way of acquiring such skills is by following an example set by a senior doctor i.e. role modelling. They conclude that the teaching of communication skills is important also for improving the informational content of the interview.

In a subsequent study (Maguire et al 1986) they found that those initially taught maintained the skills over time whereas those who were never trained showed signs of some improvements and some deficits over time. It seems that training effects can persist over time and the lack of training can lead to entrenched bad styles. Some individuals do learn from experience and exposure.

1.2.1 LEY'S FAILURE HYPOTHESES

Ley (1977) discusses four possible hypotheses to account for dissatisfaction by patients which is expressed even when specific attempts to inform them has been made:-

THE PERSONALITY HYPOTHESIS

This hypothesis accounts for dissatisfactionas a result of "personality defects" or idiosyncracies characterising a group of patients who will always have complaints, in spite of efforts to

provide better communications.

That personality differences exist within any given patient population can hardly be disputed. Janis (1956) has shown quite clearly that there are groups with different anxiety levels, both pre and post operatively. Herzlich (1978) looks at different sick role interpretations and enlarges upon different role adoptions. There are those who treat illness as an occupation and those who view it more functionally.

The mere existance of different patient personality types does not necessarily mean that there is a consistent group who would constantly be complaining about communication. If this group did exist, and could clearly be identified, then perhaps improvements could be more straightforward. However this seems to be an oversimplification. It is unclear whether these would be ingrained characteristics which would be present in all situations or whether they are situation specific. Furthermore the group would have to be large in order to account for the high level of dissatisfaction expressed in surveys.

A finding at odds with the proposal of a "complainers" group is that patients are reporting overall high satisfaction with general aspects of their medical care. It seems inconsistent for patients who are "complainers"not to complain about all aspects of care. Furthermore the surveys tend to show that there are no complaints of similar magnitude with other aspects of care. It would seem unlikely that patients might have personalities that tend only to complain about communications.

On grounds such as these Ley dismisses the feasability of this hypothesis as the only explanation for dissatisfaction with communication. Completely dismissing this aspect seems short-sighted, as totally to dismiss personality aspects of the patients provides an extremely static and one sided theory. As Janis (1958) Johnston (1976) Johnson (1975) Sime (1973) have shown, communication can and should be looked at in conjunction with the variables associated with both the care receiver and the care giver.

PSYCHODYNAMIC HYPOTHESIS

Ley next drew on writings of such workers as Balint (1964) Balint et. al (1970) and Blum (1972) who propose that the presenting complaints mentioned are not necessarily the real underlying worry - whether this is a conscious or unconscious action. Thus if the presenting complaint is dealt with, albeit adequately, the patient may still express dissatisfaction since the underlying problems may not have been addressed in any way.

Although Ley could not locate research directly addressing this idea, there are findings within the literature suggesting that patients often do not, or are unable to, bring matters of importance to the attention of the care giver. Korsch and Negrete (1972) questioned mothers of children attending casualty departments regarding satisfaction with their interviews. They found in many instances mothers had not reported serious worries to the doctors.

DOCTOR PATIENT INTERACTION

This possible explanation examines a series of interaction related variables. Any interaction may comprise a number of components and the absence of any one of them could result in overall dissatisfaction. Stimson and Webb (1975) looked at the interaction between doctors and patients in some detail. Pendleton (1979) analysed doctor patient interviews and looked for correlates of satisfaction. Pendelton attempted to break down the interview into component parts and analyse their impact to understand the interaction process. He found that patient satisfaction was more likely when the doctor discovered and dealt with patient worries and expectations and used a warm, interested, concerned manner.

Unfortunately many studies concentrate on the doctors rather than the doctors and the patients. Roter (1979) attempted to change patient behaviour by training and rehearsing questioning prior to consultations. Although such consultations resulted in greater questioning, the doctors showed higher anger towards such questioning patients.

There is still much work needed on analysing this interaction to understand fully the different components. Rutter and MacGuire (1977) broke down their training skill into interviewing categories. Such studies were focused mainly on the doctor's behaviour rather than on the interactive process involved. Ley did not find this hypothesis to be a likely explanation of the findings. However, studies by Pendelton (1981) and Byrne and Long (1976) cannot be easily dismissed. These workers have shown that both the doctor and the patient bring variation to the setting and the context is affected by additional variables such as social class, the nature of the illness and the environment.

COGNITIVE HYPOTHESIS

As Ley felt the above three hypotheses failed to account for disatisfaction with communication, he produced a cognitive theory to account for the data. Ley proposed that in order to attain effective communication the messages contained within and communication must be both "understood and remembered". Ley and Spelman noted that understanding and memory were pre-requisites, though not sufficient alone, to ensure satisfaction. They did not expand fully on the components which would be sufficient to ensure satisfaction. They proceded to relate understanding and memory factors to compliance with medical instructions and satisfaction. A series of studies have validated their theoretical postulation.

Firstly, patients often failed initially to understand and subsequently to recall things they were told. Three possible explanations could account for this:-

(i) the material presented to patients is often too difficult for them to comprehend.

(ii) patients often lack elementary technical medical knowledge

(iii) patients often have active misconceptions which militate against proper understanding.

Studies have supported all these suggestions. Ley et. al. (1972), and Lovius et. al. (1973) looked at the difficulty of material presented to patients. They utilised the "Flesch Formula" (Flesch 1948) which measures readability in terms of the proportion of the

population who could be expected to understand a piece of written material in terms of reading ease.The Flesch formula has correlated with standardized reading tests (Flesch 1948, Klare 1963, Peterson et. al. 1956, Powers et. al 1958); the speed with which a passage can be read (Brown 1952, Klare et. al 1957); the probability that an article in a newspaper will be read (Ludwig 1949, Swanson 1148); the rated difficulty of a passage (Carater 1955, Gilinsky 1948, Klare et. al 1955, Russell and Rea 1951); and lastly knowledge of contents of a passage after reading .

Ley (1972) looked at x-ray leaflets handed out to patients and found readability scores "suggested that the leaflets would be too difficult for their intended recipients". Wild and Evans (1968) showedthat a leaflet regarding a barium meal would generate an expected comprehension by 25% of the population. Lovius (1973) looked at leaflets in dental hospitals with similar conclusions. Such factors may well have operated in the leaflets produced by the staff in the Houghton (1968) study.

Boyle (1970) looked at the extent to which a sample of lay people could identify locations of vital organs, and compared this with the abilities of professional doctors on similar stimulus material. He found that a high proportion of the lay group could not accurately identify locations of such organs as the kidneys, bladder, intestines or stomach. Riley (1966) looked at lay reactions to medical instructions and found many errors in understanding.

Lack of technical knowledge in conjunction with active misconceptions can militate against adequate communications. This can be further hindered if the instruction giver is unaware of these

points. Spelman and Ley (1966) found that 91% of a sample knew the relation between lung cancer and cigarette smoking, 73% knew the treatment, 56% knew the symptoms and close on a third thought lung cancer to be easily curable and not very serious. If a doctor failed to convince a patient to stop smoking on the grounds of lung cancer hazards , it may well have been as a result of the patients' incorrect understanding of the full extent of the hazards rather than a direct lack of desire to comply.

Coope and Metcalfe (1979) found a "distressing ignorance" when questions on knowledge of "personal preventive medicine, treatment and appropriate use of health services" were put to a population of patients attending general practitioner surgeries.

Robinson and Mercer (1980) looked at the relationship between elderly patients' health beliefs and the medical professions' thoughts about such beliefs. They found that although the health professionals were fairly competent at predicting attitudes towards general health, they were less successful in predicting "beliefs of old people about the preventability of common illnesses".

These three cognitive components, the difficulty of material presented, the lack of technical knowledge and corresponding misconceptions, may be confounded by discrepancies between information professionals feel patients ought to have and information such patients want. Information covers a wide range of topicsincluding diagnosis, progress and prognosis to explanatory

information. Cartwright (1973) and co-workers showed that health workers to a large extent felt that dying patients ought not be told of the status of their condition. Feiffel (1963) in a review of the research commented that 77.9% of laymen would prefer to be informed of imminent death, whereas 69.9% of doctors felt that dying patients ought not to be informed. Carwright confirmed the existance of this conflict between stated desire and practice. Withholding of information may be a further factor to be considered when measures of understanding, recall, satisfaction and compliance are taken. If a patient is made fully aware of the complete implications of his or her health state, the severity or importance of information may become more relevant to the patient.

From these studies it does seem that cognitive variables as set out by Ley and Spelman (1967) may be contributing factors. If these cognitive factors account for failures in communication then they can be examined by monitoring the effects of manipulations of these cognitive variables on outcome.

1.2.5. STUDIES TO TEST THE COGNITIVE HYPOTHESIS

Ley (1976) investigated the relationship between understanding information and certain outcome variables in a group of psychiatric patients generated from consecutive outpatient referrals. The patients received four different levels of leaflets which filled in gaps in information gathered by initial interview in a pilot study. The written material was controlled for Readability according to the Flesch Formula. The levels were "1. Easy; 2. Moderate; 3. Difficult and 4. No Leaflet". Ley found that the "Difficult" leaflet was not dissimilar to information usually

presented. Medication was overprescribed and patients were asked to return extra pills. Tablet taking was measured by a pill count. Ley found a significant reduction in medication errors in both the easy and moderate leaflet groups.

Although such studies showed improvement in adhering to medical regimens, satisfaction was not reported. Ley (1976) studied satisfaction in a group of in-patients. One group received an extra medical visit to ensure understanding, a second group received an extra visit without explanations in order to control for the placebo effect and lastly the control group received no visit at all. When questioned directly on satisfaction with communications after discharge, the experimental group reported 80% satisfaction compared to 41% satisfied in the placebo group and 48% of the controls. Thus as Ley states "the attempt to increase understanding had almost doubled the proportion of satisfied patients."

Houghton (1968) in a less rigorously controlled study, found an association "between satisfaction with the hospital in general and feeling that one had sufficient information." She found that people who lacked information were often those who were critical of other aspects of their care. When questioned about lack of information 66% of those reporting such a lack were also predominantly critical whereas this figure was reduced to 34% when one looked at patients who were mainly favourable.

Bertakis (1977) similarly reported effects of ensuring understanding on subsequent satisfaction. In a series of studies he first noted that there was a significant relation between information retention and satisfaction. In subsequent studies he utilised a patient

education programme by instructing the physicians to carry out a learning procedure. This simple procedure involved a request for the patient to repeat the information given to him/her at the end of the interview, so that the physician could reiterate important points, explain more fully points that seemed unclear and fill in gaps. Subsequent ratings of such interviews showed not only increased recall, but again a relationship between increased understanding recall and satisfaction. Liptack, Hulka and Cassel (1977) confirmed the relationship between satisfaction with care and recall of information. Bain (1977) showed that information content was not the only factor in recall and noted that social class related to information recall. Workers who have looked at information in greater detail have shown selectivity in recall. Anderson (1979) noted superior recall for treatment items than diagnosis items, no social class differences and found that patients with more severe pain and with higher self rated anxiety recalled more. Interview style (ranging from doctor dominated interview, to equal participation) did not affect amount recalled.

Information takes many different forms. Korsch and Negrete (1968) and Francis (1969) report on a joint study of paediatric casualty patients. They found that when expectations about information regarding diagnosis was thwarted, respondents were less likely to comply. Length of interaction did not affect satisfaction. This would be in line with Ley and Spelman's cognitive hypothesis which looks not only at the giving of information, but the content and the way it is given.

Ley et. al (1974) studied a group of obese women who were divided into different information groups and measured outcome by recording

weight loss. They found that there was a relationship between understanding knowledge of diet and weight loss. They also report on a series of correlational studies which show a relation between "reported comprehension and reported compliance". (Kincey et al. 1975, Ley et al 1976, Ley et. al 1974)

Pursuing the cognitive variables associated with satisfaction, Ley and Spelman looked at recall and forgetting. In numerous studies Ley and co-workers documented the high degree of forgetting after medical interviews (Ley & Spelman 65,67,73,76). They note that in a series of studies where patients were questioned in either out-patient or general practitioner settings, the proportion of information forgotten ranged from 37.2% to 54%. Ley further proposed that the number of statements which patients forgot had an inverse linear relationship to the amount of information presented. Ley analysed interview content and proposed that advice and instructions were most often forgotten. Although this finding was not confirmed by other workers, Ley suggested that forgetting was related to serial position of information and perceived importance and surprisingly not related to age and intellectual level.

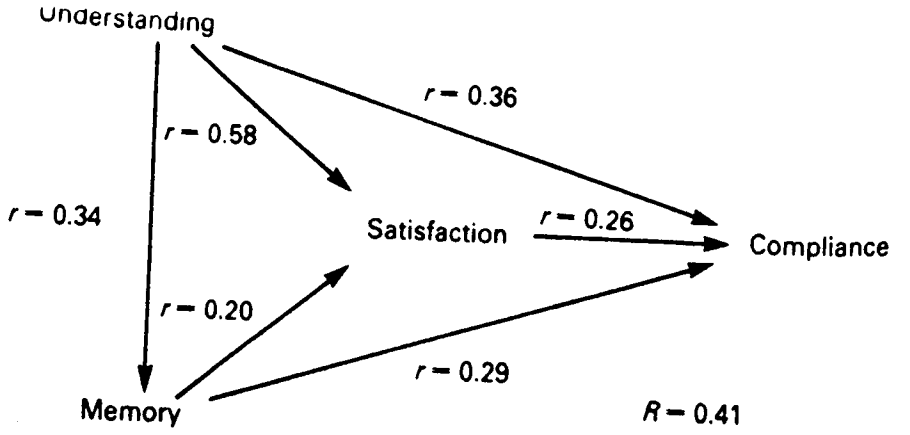
Ley (1977) looked at some well established effects regarding cognition and applied them to medical interviews. One of the clearest findings related to primacy and recency effects. This rather simple finding which is often overlooked involves the tendency of patients to recall initial information over information presented during the middle of an interview. Observations of medical interviews showed that instructions and advice are commonly given at the tail end. He put these findings to the test by altering doctor's information giving strategies. He utilised

methods such as order, stress, explicit categorization, repetition and concrete specific statements (rather than generalised advice).

Ley presented a 6 point guide to G. P.s about structuring information. These included ordering of instructions and advice initially; stress; use of short words and sentences; explicit categorization; repetition; make advice "specific, detailed and concrete". Ley (1976) recorded the effects on recall of information by patients visiting four general practitioners before and after the GP.s were given these guidelines. No differences were found between doctors. Pre and post comparisons showed an increase in mean proportion recalled by patients in all cases. Recall before ranged from .52 to .59 and after the proportions increased to .61 to .80.

In summary one can say that there is supportive evidence for cognitive factors. Patients often do not understand or recall information because it is presented in a difficult way, technical terms are used without sufficient explanation which may hinder understanding due to an often reported lacks in technical knowledge; patients often have misunderstandings that may mitigate against full comprehension of given facts, and doctors often are not aware of these misunderstandings which further hinders a satisfactory outcome of full patient understanding and recall. Studies have shown that improving understanding is related to improvements in recall and both are related to improvements in satisfaction.

The model put forward by Ley can be shown by the following representation where understanding and memory are both factors which contribute to satisfaction which in turn affects compliance.



Although Ley (1988) presents correlational support for the links, intervention studies are perhaps stronger indicators of cause and effect.

A wide range of intervention studies have been reported (See table 1.2 for a summary). The major difficulty in interpreting findings from these studies lies with the wide range of inputs and the variety of output measures. Outcome measures generally divide into a range of recovery related indices on the one hand and compliance on the other.

Compliance will not be addressed directly in this study as it is affected by many ethical dilemmas associated with models of childbirth and the role of medicine. In studies in other medical settings a relationship has been noted between understanding and compliance (Watkins et. al 1967, Tagliacozzo and Ima 1970, Kincey et. al. 1975, Ley et al. 1976, Smith et. al 1986). Memory and satisfaction have also been known to correlate with compliance (Bertakis 1977, Barlett et. al 1984, Ley 1976, Smith et. al 1986).

Cognitive factors, it seems, may well play a part in satisfaction. Yet if they are a necessary element, are they sufficient to

explain all problems? If this model could predict satisfaction from improved understanding and memory then the provision of good information and communication has a key function. Furthermore, is there a deeper understanding of what is included in "satisfaction"? Is there a global level of contentment or do some levels satisfy some patients and not others? How can satisfaction be best understood and measured? Does expectation have a major role and can this, in turn, be affected by understanding and memory factors? This model seems to provide a fairly straightforward level of explanation without accounting for many patient variables or situation dynamics. The function of communication generally, and in obstetrics particularly, may help shed light on some of the efficacy of the model and the importance of these other concepts.

1.4 COMMUNICATION AS A PSYCHOLOGICAL OR MEDICAL TOOL

It is clear from the above that there is dissatisfaction with communication, and that psychological models accounting for such dissatisfaction can be employed to provide an understanding of the impact of a care package on a consumer population. This also means that a model can provide an intervention tool to alter outcome beneficially.

As such, communication presents a considerable challenge to understanding and the possibility of considerable benefits if understood. Communication is the basis of the doctor patient interaction, but can also be aimed at specific issues such as anxiety and attitudes. By using communication to affect these it may be possible to ease distress, and by exploring the link between attitudes and behaviour to promote recovery. The major obstacle in

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Kindelan and Kent (1988) examined 103 consultations. Prior to the visit patients ordered information preferences and after consultation they rated satisfaction. Doctors rated the consultation and indicated the primary information preference of their patient. They found no relation between patient measures and doctors' perceptions. They found no relation between doctor and patient satisfaction.

Communication problems may differ from the equally one-sided patient and doctor points of view. Communication deficits seem to include problems of engaging patients, obtaining information, giving information, advice and instructions, listening, neglecting psychosocial needs of patients and providing reassurance. Why these deficits exist is more difficult to understand. Possible explanations may stem from the application of a medical model in care, inappropriate expectations of senior staff, organizational and administratiave factors, emotional protection such as fear of losing control, inadequate training or inadequate understanding of the psychological factors in medical conditions.

2.5 COMMUNICATIONS AND ANXIETY

Psychological states such as anxiety have been reported as influencing the passage of operative procedures (Wallace 1984). Janis (1958, 71) examined the link between anxiety and coping. Knowledge of the nature of such a link underlines the importance of psychology to medicine emphasising that ignorance of such psychologicl variables may prove detrimental to the professionals and patients concerned. Surgery can be viewed as a "crisis" with stress response (Janis 1958, Spielberger 1973) and thereby allows

full understanding relates to the complex nature of doctor patient interactions and the fact that many studies look at isolated areas of the interaction and process rather than providing an holistic approach.

Rutter and Hayward (1987) looked at the Ley model in terms of a predictive tool. They looked at knowledge and attitudes about pregnancy in an attempt to predict satisfaction with maternity care. They measured knowledge and attitudes in 73 primiparous women before and after ante-natal classes and examined satisfaction post partum. They found that the most important predictor of satisfaction was attitudes before the ante-natal classes and that knowledge scores were not predictive.

Communication problems have abounded in the literature (Ley 1977, Platt and McMath 1979, Duffy et al 1980). Not only are patients dissatisfied but there are shortcomings in fundamental communication skills of doctors. Few studies howver, have examined the link, if any, between such shortcomings in interviewer performance and resulting satisfaction by patients.

"Communication" is often not clearly defined. It covers a wide range of items within an interaction. Initially it refers to the absolute presence or absence of dialogue. It then may progress to the content of the dialogue and the informational level within the interaction. There are many more aspects of communications. These may include manner and style of interaction, therapeutic value or level of understanding.

Few studies have tried to differentiate these factors. A study by

Johnston (1979) provided a notable exception. In this study information content was systematically varied and the research revealed a superior outcome for information about sensations as opposed to procedures.

Ley and Morris (1984) aimed to increase both recall and satisfaction by changing some global aspects of behaviour including specific versus vague recommendations, stressing important information and providing supplementary information. When these interventions have an effect it is unclear which component is responsible or whether the changes dramatically alter the interview as a whole. Such global interventions do not take inot account patient variables and may be unhelpful in meeting the needs of an individual patient.

Type of information may be relevant. Kindelan and Kent (1986) questioned patients about the type of information they would prefer. They noted wide differences despite the fact that diagnosis information was the item mentioned by the largest percentage of their sample. Taylor et. al (1980) found discrepancies between patient stated purpose and GP perceived purpose of a medical interview.

It is unclear whether patients and doctors agree. Biehn and Molineaux (1979) found little correlation between doctor and patient rating of dimensions of care. Indeed it is also unclear whether doctors perceive dissatisfaction when it is present (Merkel 1984).

crisis intervention paradigms to offer solutions (See Auerback and Kilman 1977). Intervention may involve information provision, relaxation and coping strategies.

Janis (1958, 1971) studied psychological variables in clinical outcome in college students and subsequently in a smaller sample of surgical patients based on which he postulated that postoperative outcome measures could be predicted from preoperative psychological measures. He examined preoperative anxiety states of patients, the interaction of these states with coping strategies and subsequently the interrelation with outcome. Janis found a curvilinear relationship between preoperative anxiety and post operative outcome. Those with the most positive post operative outcome were mildly anxious preoperatively. High and low anxiety patients did not fare as well. Janis accounted for this finding by relating anxiety level to coping strategies. He put forward the notion that highly anxious patients did not formulate adequate coping strategies and low anxiety patients had unrealistic ideas about the forthcoming stresses. The mildly anxious group were more realistic and the benefits of the "work of worry" could be seen in adequate coping mechanisms. The most relevant comment that Janis (1971) proposed was one concerning one of the mechanisms of this group, namely that they sought out adequate information which enabled them to rehearse and anticipate impending dangers. In the absence of this element patients were not adequately rehearsed and informed and when faced with danger they felt helpless, frightened and angry. He surmised the information/coping link which has important implications. In order to validate this claim, one would have to look systematically at the links between anxiety level in the preoperative state and information seeking strategies which he did not do. The three main themes can thus be summarised as :-

1. The Curvilinear nature of the relationship where pre-operative fear was related to postoperative outcomes of anger,

complaints and emotional disturbance.

2. Information about forthcoming experiences aided adjustment and was related to anger and fear, confidence in the surgeon and retrospective emotional disturbance.

3. Differential information was found amongst the three groups, with the low pre-operative anxiety group reporting least information.

1.5 CRITIQUE OF THE MODEL

Janis'model presents a challenge. It can be questioned at different levels. Firstly, many workers, though not all, have failed to replicate the curvilinear relationship, and have, instead, come up with a linear model instead. This model claims that low anxiety patients fare the best, moderate anxiety patients fare averagely and high anxiety patients fare worst. This would mean that there would be some form of agreement between models on the high and moderate anxiety groups, but the models would differ with regard to the low anxiety group. Indeed, for these predicted outcome would be the exact opposite in the two theories.

These studies are sometimes difficult to compare as the constructs involved are often undefined and they are operationalised in a variety of ways. The construct of anxiety has been widely interpreted. Wolfer (1973) discusses the wide variety of measures used and cites examples such as mood and pain self-ratings, different 'anxiety' tests standardised on all kinds of populations, analgesia uptake, hospitalisation, heart rate, blood pressure,

palmar sweat indices etc. Furthermore, studies have not attempted to correlate these indices. It seems unclear whether the concept of anxiety and these outcome indices are interchangeable.

When linear relationships were found, (Johnson Leventhal and Dabbs, Levy 1959, Martinez Urrutia 1975, Vernon 1967, Sime 1973) it is not clear that the predictive indices were exactly the same. Johnston (1979) has looked at the possible effects of state anxiety compared with situational anxiety (using the Speilberger State Trait Anxiety inventory) and found that if one looks at anxiety change rather than absolute anxiety level a previously linear relationship is converted into one which better resembles Janis' curvilinear relationship. Auerbach (1973) measuring anxiety with the Spielberger State-Trate Anxiety Inventory found some evidence that A-State was curvilinearly related to post-operative adjustment.

Johnston & Carpenter (1978) looked at test-retest data and intercorrelations of the variety of anxiety tests and found the Speilberger State Trait Anxiety inventory most reliable.

Many studies have examined the relationships between pre-operative measures and post operative outcomes generally. Egbert Bartlet and Welch (1964) looked at a group of 97 patients. A randomly selected experimental group received preoperative information from the anaethetist including techniques for coping with the pain. Post operative measures showed a significant reduction in pain relief requests. Patients in the experimental group were rated by an assessor working blind as in "better physical and emotional condition than the control group". The surgeons, also unaware of the treatment group, sent patients within the experimental group

home on average of 2.7 days earlier than the control group. This was significantly earlier than the control group discharge.

However, Ley (1977) points out that one of the components of the "information" package was in itself a technique which could aid recovery. It is unclear therefore whether it was the pure reception of information or the added access to a recuperative technique which resulted in the outcome reported.

Other workers such as Healey (1968), Van Aernam (1971), Chapman (1968) Putt (1970) and many others have demonstrated impacts of input on outcome measures. A summary of the main studies in this area can be seen in table 1.2 .

It seems from these intervention studies that pre-operative input has effects on post operative outcome. The areas of impact can be grouped under three headings namely psychological (to include the reduction in anxiety and depression and increases in satisfaction), behavioural (including increased compliance and involvement) and lastly physiological (including lowering of pain reporting, fewer complications and shorter hospital stays). However, it does seem necessary to understand the nature of the relationship and what components of information or input trigger effects, how they do so, and on whom it works best. The mechanisms of influence also need to be understood. Many of the measures employed need to be scrutinized with great care. There are often value judgements made about an outcome which are not necessarily correct in all instances. For example shorter hospital stays are taken as a positive outcome. Although this may have beneficial effects from an economic point of view there may be some patients who ought to stay in hopsital for

TABLE 1.2 INTERVENTION STUDIES

AUTHOR	TYPE OF INTERVENTION
Healy (1968)	Series of instructions before surgery
Lindeman and Van Aernam (1971)	Instructions prior to surgery
Andred (1970)	Information pack to hernia patients
Johnson (1972)	Information (procedural and sensation)
Vernon and Bigelow (74)	Information
Chapman (64)	Informatin to hernia patients
Blacy and Starr (1964)	Psychological preparation
Houghton (1966)	Communication package
Putt (1970)	Information to ulcer patients and psychological preparation (plus control)
Lindeman Stetzer (73)	Information to surgical patients
Lindeman and Van Aernam (1971)	Instruction, individual & group
Chapman (1969)	Psychological prepartion hernia patients Quasi psychotherapy
Egbert Battit Turndorf and Beecher (1963)	Instructions and information to surgery patients - pre-op visit
Layne et al (1971)	Psychological preparation
Schmitt and Wooldridge (1973)	Information, instruction and psychological preparation
Langer Janis & Wolfer (1975)	Coping training.
Kupst et. al. (1975)	Repetition of information
Williams et. al (1975).	Pre operative visit.
Mallamud (1977)	Modelling
Newton and Reading (77)	IUD patients - information
Vernon (1973)	Modelling
Melamed and Siegel (75)	Film - modelling (children)
Reading and Cox (1979)	Feedback
Leventhal et. al (1979)	Pain warning and prep. information
Robinson (1979)	Self Control with self administration of analgesia

longer. Analgesia intake is a similar item. No worker has tried to generate objective criteria for recovery which could be used in a variety of settings. Many of the input packages contain multi-factors. It is now necessary to isolate which particular factor is related to specific effects.

Moves in this direction have started emerging. Johnson (1973) looked at the differences between information packages which focused on sensations compared to explanations of procedures and lastly compared with a control group receiving routine treatment. Both experimental groups required less pain relief. However on some measures, the 'sensations' group showed more improved outcomes than the "procedure" group. Wolfer (1973) distinguishes between 'technical' and 'supportive' types of information and claims that both are needed for optimum outcome. However, Chapman (1969) compared information only with an information plus therapy package against a control group. The addition of therapy did not make a significant difference. Both input groups differed from the control group in terms of discharge and pain relief medication. Langer, Janis and Wolfer (1975) compared major surgery patients who received cognitive coping strategies with those receiving information and reassurance and found a main effect both pre and post operatively for the former.

Lazarus Averill and Opton (1974) claimed that cognitive appraisal of the threat of surgery may determine coping strategy and personality variables may predict which patients will use particular coping strategies when faced with impending stress. Such prediction would allow for more sensitive psychological preparation. Fenz and Epstein (1967, Speisman et. al 1964, Wolff et al 1964) looked at

disposition and pre-stress anxiety level.

1.6 RELEVANCE IN OBSTETRICS

Anxiety has been consistently reported as the most crucial negative emotion in childbearing (Astbury & Lumly 1982). Anxiety, when clinically defined, is the presence of irrational fear. Kumar & Robson have shown that the greatest concern of a mother is the well being of herself and her baby. Knowledge of problems which could occur during pregnancy may render anxiety perfectly rational. Studies have related anxiety in pregnancy to adverse obstetric outcomes (Davids 1961, Crandon (1979). Yet Pitt (1968) and Breen (1975) have shown that moderate levels of anxiety in late pregnancy were associated with improved postnatal adjustment in line with the Janis model. The situation is by no means clear, and Beck et al (1980) and Astbury (1980) found anxiety levels unrelated to labour complications. Astbury notes that the difficulty relates to the way in which anxiety is measured and knowledge of the sources of anxiety. Gorsuch and Key (1974) stressed the need to identify sources of anxiety. Barclay and Barclay (1976) compared pregnant women with a matched group of non-pregnant women and found that pregnant women were more knowledgable about pregnancy but there were no significant differences in anxiety. Astbury (1980) found that women who attended classes did not differ in anxiety from those who did not attend.

Psychological state has been associated with medical outcome in childbirth (Crandon 1979, Kumar and Robson 1977, Elliott 1983, Gorsuch et al,Murai). Anxiety has been specifically looked at. It has been related to premature delivery (Beard 1980) and poor

progress in labour.(Lederman et al 1985). Gennaro (1985) examined anxiety levels as predictors of adaptation to premature births. Strickland (1987) went one stage further and examined anxiety states experienced by expectant fathers and the extent to which these related to the father experiencing symptoms during the pregnancy. Labour variables, in turn have been used to examine subsequent parenting and developmental issues in the life of a young baby. It therefore seems important to understand the role and progress of such psychological states.

Mood changes have frequently been reported as an aftermath of childbirth. (Hopkins et al 1984, Nott et al 1976, Oakley 1984, Thirkettle & Knight 1985). Indeed, Kendell (1984) reports that puerperal depressions affect between 10 and 15% of all mothers. He further points out that some 50% or more women experience transient mood disturbance but these are "too ephemeral to be regarded as illness". Yet they may cause distress to women and hence may warrant attention.

If there were a link between ante-natal psychological state and post-partum mood disturbance then such factors may allow for identification of women at risk and possibly provide an avenue of input which may modify or even prevent such breakdown.

Early studies (Sontage et al 1969 and Turner 1965) noted that anxiety in pregnancy had adverse implications for outcome. Raised anxiety has been related to a variety of symptoms in pregnancy (Crandon 1979) and to difficult labour and delivery. Crandon (1979) studied 146 women and related ante-natal anxiety levels to the incidence of pre-eclampsia, forceps delivery,

prolonged labour and precipitate labours. He further found a significant increase in post partum haemorrhage and foetal distress in the high anxiety group. He concludes that anxiety factors can be used as an index of pre-natal and maternal risk level. However, there may be problems with such interpretations. Firstly Crandon does not give details of sample selection. It may be that factors associated with poor progression in pregnancy could account for raised anxiety. Women who had pre-eclampsia may well be highly concerned with this. Furthermore such women would almost certainly be recommended epidural analgesia and this (rather than anxiety) may account for the high forceps rate. Thus Crandon's data is of interest, yet methodological considerations may affect the conclusions that can be drawn from such studies.

In a subsequent study, Crandon (1979b) reports on the relation between maternal anxiety and neonatal wellbeing. It appears that the data was gathered from the same sample (again without full details). In this study raised anxiety was significantly related to depressed baby APGAR scores. (APGAR scores are measures on a ten point scale of the physical state at birth). He goes as far as to speculate that the APGAR scores could be accounted for by hypoxia which in turn has been associated with neurological abnormality and concludes that "children born to highly anxious mothers are more likely to have some degree of mental retardation". Clearly, such conclusions must be drawn with great caution and on a more substantial data base than that provided by Crandon. The studies, do, however, highlight the importance of ante-natal anxiety and draw attention to the need for further work.

Omer (1986) examined the relationship between ante-natal anxiety and

premature contractions. In a prospective study of 170 women anxiety score was significantly higher for those who subsequently had premature contractions. The authors also measured "life events" and concluded that anxiety levels may be better predictors of premature labour. They conclude that it may not be a single factor but anxiety in conjunction with other factors may contribute. These authors proceed to intervene and evaluate the effectiveness of hypnotic relaxation in preventing premature labour. They feel that such techniques may be effective in controlling anxiety.

Why has pregnancy been seen as a stressful time? Many Obstetric text books refer to pregnancy as a time of "anxiety" for mothers. The validation is often anecdotal.(Pitt 1978) More recent research has examined stressors in pregnancy.

Heymans and Winter (1975) examined fears during pregnancy and noted that 81% of their sample reported fears with a peak in the last trimester.

Arizmendi and Affonso (1987) tried to identify psychosocial stressors in three groups of pregnant women, 1st 2nd and 3rd trimester. They found the wellbeing of the baby and relationship issues to be the most frequent stressor. They found anxiety level generated by events differred across childbearing period and the events that were perceived to trigger the most anxiety were 'internal events such as anticipatory fears or concerns regarding labour and delivery and the baby's welfare'.

Elliott (1983) found low levels of psychopathology in a longitudinal study of 128 women over the course of their pregnancy. She confirmed an increase of worries in the third trimester. This was significant in relation to worries about forthcoming labour. In the group as a whole Elliott found no effects, however further analysis revealed a series of sub-groups where 30% of her subjects showed measurable changes in the amount of tension reported over the course of the pregnancy. Elliott's data suggests that there is no 'normative experience of pregnancy' and that experiences are highly individual

Many reports of dissatisfaction and worries have emerged from literature examining the medicalisation of childbirth. These include the doctor-patient interaction, the impact of medicalisation of childbirth on the individual experience and the effects of routine procedures on the psychological experience.

Uddenburg (1979) found that pharmacological treatment (in this case diazepam or ketobemidon) was not correlated with how a woman described her delivery. Emotional factors affected the perception of pain and reduction of anxiety.

1.7 STRESSORS IN PREGNANCY

The movement of childbirth from home to hospital has been documented as a potential stressor (Chard and Richards 1977).

Ante-natal clinics have been evaluated with some dissatisfaction shown by Oakley 1979, Cartwright 1981. The concept of routine screening has been criticised by workers such as Hall and Chng (1982) who question the efficacy of such clinics and note the psychological and medical cost. They studied 1,907 women and felt that expectations were unrealistic. Emergency ante-natal admissions occurred despite routine care (which neither detected nor prevented the problems). Overdiagnosis was high despite claims by advocates for ante-natal screening (Social service committee 1980 stated that "Antenatal care was a perfect example of preventive medicine").

Reid and McIlwaine (1980) randomly selected 90 women attending a Scottish ante-natal clinic (response rate 96%) and noted difficulties including long travelling distances to the clinic and excessively long waits to be seen - 42% of the sample had waited half an hour and 37% up to an hour. The final 21% had waited over an hour to be seen. Communications were a problem made worse by the fact that women saw different doctors at each visit. 85% would have liked to see the same doctor and 39% reported they did not find out all they wanted to know.

Some of the screening procedures at ante-natal clinics are

associated with anxiety. Farrant (1979, 1980) examined the effects of alpha feta screening on anxiety. She found that the procedure was carried out on two populations - those who had risk factors and the general population. The former group found the test helpful in decision making but the latter experienced high anxiety which did not abate even when tests were subsequently normal.

Pregnancy is a time for preventive and preparatory work. Houghton (1964, 1966) studied 600 mothers from different hospitals. She found high levels of criticism for informational aspects of care.

Cartwright (1979) examined induction of labour. She too found a high desire for information and recorded that women were seldom allowed to be involved in decision making despite a desire to do so.

Homans (1985) found that women had difficulties in receiving information about ultra sound scanning. Reading (1981) reported on a study where feedback was given to women during their ultrasound scan. This correlated with a reduction of anxiety. Unfortunatey no measure was gained of pre-scan anxiety which would have given some indication of the amount of anxiety created by the procedure in the first place.

Many studies reinforce the desire for information and feedback (McKee 1980, Oakley 1979, McIntyre 1979, Reid and McIlwaine 1980). Lack of feedback was upsetting in McIntyre's (1979) study and was appreciated when given even if it included problems.

Labour is often a focus of anxiety. Riley (1977) looked at induced labour and found it to be more painful for 45% of subjects. Pain in

labour is commonly mentioned as anxiety inducing.

As one of the major stressors of pregnancy has been described as labour pain and issues surrounding pain management it is surprising that such a little of the psychological literature on pain is used in this context. Is there a link between communications and pain or pain experience? Pain management in labour is currently dominated by pharmacological pain relief. The major forms of use in the United Kingdom are Pethidine and Epidural anaesthesia. Pain management and pain relief bring with them a wide range of management issues including the amount of pain experienced, the extent to which this reaches desired levels, the way in which management was carried out and the evaluation of the procedures and allied implications involved in pain relief administration. This includes explanations, effects of the different forms of analgesia, the drips and needles used to administer them and the sensations experienced by the women.

Rosen (1977) felt that anxiety and fear of pain may exacerbate the experience of pain and increase the need for pain relief. There is much current psychological knowledge of pain which may be relevant to obstetrics in general and communication aspects of care in particular. Pain is known to be affected by suggestion and placebo factors. (Beecher 1972, Melzack, Weisz and Sprague 1963). This can be carried to extremes in interventions such as Hypnosis (Chaves and Barber 1974). Relaxation, biofeedback and desensitization have all been employed to reduce or ameliorate pain. Psychological models have been employed to explain painful events and pain perceptions (e.g. Zimbardo et. al. 1966, Davidson and Valins 1969). Psychological reactions, such as learned helplessness (Fordyce

1976,78) could increase pain perception. On the other hand, simple psychological interventions such as the provision of control or choice have altered pain reports (Robinson 1972, Stauv Tursky and Schwartz 1971). Prior preparation for pain has been widely studied. Pain behaviour has often been learned by modelling (Melamed 1977) as well as coping with pain.

Having already noted that communications in pregnancy may have a general role in terms of satisfaction with the quality of the experience, we may also see that there is a more specific role as a mediator in stressors of pregnancy such as pain or mood.

1.8 INFORMATION SEEKING IN PREGNANCY

In Ley's model the role of information is explained. The intervention studies have noted the impact of information on outcome measures. These seem to refer, on the whole to information provision. From the patient point of view, information seeking may be of interest and play a role in subsequent satisfaction and coping. Ley (1977) claims that information may predict satisfaction. Under such a theory it would be important to examine information level, information seeking strategies and information appraisal. Ante-natal classes are unique in medical care provision. They are set up to address such information needs.

Comparisons of women who attend classes with those who do not is very difficult on methodological grounds. There may be a systematic bias of self selection which could account for any subsequent differences. A methodologically advanced study would involve random allocation of preparation to half of a group of women who requested

preparation and deny it to the other half. Of course such studies are impossible on ethical grounds. It would also be difficult to control for the women who did not receive allocation into the the "prepared" group in that they may seek alternative forms of preparation. A woman who has expressed the desire to be prepared for childbirth is not likely to go unprepared simply to maintain the control status within the study.

However, given these restraints Enkin et. al (1972) matched 40 women who were unable to be accommodated within the classes with women of similar age parity and delivery date within the class, and a second match with similar women not requesting classes. This engendered 28 triplets. The findings showed that the classes group used significantly less analgesia during labour, needed less anaesthetic and less "operative intervention" than the other two control groups and significantly more favourable labour experience, together with significantly lower scores on depressive scales post delivery (Zung scale).

Ante-natal classes provide both information and training for pain management in labour. Enkin (1982) reviewed studies comparing pain management in labour for groups attending different classes. He noted a consistent effect of decreased use in analgesia and anaesthesia in prepared women but no evidence that such women experienced less pain. Ante-natal education has been creditead with other advantages such as lowered blood loss (Miller 161) fewer interventions (Enkin et. al 1972, Hughey et. al 1978) and improved foetal measurements (Hughey et. al 1978). Yet Enkin notes that such effects may be secondary to decreased medication. On the other hand Scott and Rose (1976) and Timee (1979) found no advantage for those

in the prepared groups. A more positive picture emerges if the experience of the mother is tapped. Studies such as Doering and Entwistle (1875) and Charles et. al (1978) show that prepared mothers have increased awareness and reported greater enjoyment of the experience.

1.9 METHODOLOGICAL ISSUES

There are many methodological issues which may arise from reporting of communications and anxiety states. This is confounded when the study population comprise women at the time of childbirth. It causes difficulties in respect of applied research as well as many feminist concerns on the way women are researched, the meaning of such research and the methodological difficulties linked with traditional approaches.

COMMUNICATION STUDIES

Definitions of communication are not standardised. Communication covers a wide range of interaction and is often used interchangeably by different workers. This creates problems for measurement, comparisons between studies and understanding the impact of interventions. Ley (1977) notes how some intervention packages contain information about exercises which may directly affect outcome measures. Conclusions from such studies are difficult as it is inclear whether it is communication factors or training factors that account for subsequent outcomes. In this study subjects rate

communication aspects of care and in the final empirical study an attempt is made to understand which components of communication contribute to outcome effects.

ANXIETY

Anxiety as a mood state has been measured by physiological means (heart rate, pulse rate, physiological indicators) and by psychological means. These include self rating, standardised inventories such as the Spielberger, Lorr McNair and others as well as observer ratings. Many workers agree on the existance of anxiety as well as the importance of the mood state, yet there is no agreed criterion for measuring anxiety. Johnston and Hackman (1977) examined the cross-validation and response set in repeated use of mood questionnaires and found that mood measures changed in parallel. Anxiety states were of particular note. In the studies carried out here, the State-Trait Anxiety Inventory (STAI) (Spielberger et. al. 1970) and the Lorr et. al. scales (Lorr et. al. 1967) based on the findings of Johnston who concluded that the STAI was the most useful measue of anxiety and the Lorr had minimal response set.

Besides problems measuring the presence or absence of anxiety state, a further difficulty arises in the value judgements that workers make on the scores. Most workers are interested in high and low anxiety. As there is no clinical criteria for anxiety state (such as with depression), workers have used a variety of measures. Some (e.g. Wallace 1984) simple divide their sample into equal groups. This limits the study to the group under investigation. High anxiety is not necessarily absolute, but is, in effect, defined as

"higher than the other respondents in the group". Subjects who fall into such high anxiety groups may well not be defined as high anxiety in another study. This provides problems for generalising findings. Others give a more useful definition of anxiety where they set up a criterion. This may relate to a number of standard deviations above and below a mean, or absolute readings on particular scales.

MEASURES

Many of the studies utilise self report measures. Such reports have often presented biased findings as documented by workers such as Sommer 1973, Parlee 1973) Rather than abandon this method of investigation it is useful to take these factors into account and perhaps be aware of the possible causes of such bias.

The experimenter needs to take into account that in all reseasrch subjects may be fulfilling experimenter expectations. Indeed, they may change their perceptions on the very variables under study such as communications, anxiety or pain as a result of positive affect induced by being the 'object' of interest in an experiment. On the other hand they may report negative symptoms if they feel that this may be 'required'.

APPLIED STUDIES

The debate of laboratory versus applied studies is highly relevant here. Obviously the advantages of laboratory studies relate to the

high level of control. Much of this is lost in an applied setting. Pregnancy and allied communication and anxiety issues are applied. Such studies must almost inevitably sacrifice a measure of control in order to measure applied issues. Within such studies, random allocation to treatment groups for for any major intervention is highly unlikely and the overriding concern of the clinical well being of the patient often overrules much research. However, given these restraints it is not impossible to study the systematic impact of a variety of conditions on women. Such difficulties with control should not deter research but should allow for caution in interpretation and generalising of findings.

METHODOLOGY

Much has been written about choice of methodology, bias in research and problems of measurement, particular in studies involving women and women's issues. (Oakley 1986, Roberts 1981, Gilligan 1982, Wilkinson 1986). Wilknson describes a need to examine the role of the researcher and to acknowledge the limitations set by "traditional" criteria in tapping women's experience. Oakley (1981) describes a variety of methodological problems associated with interviewing women. She claims that it is absurd for an interviewer to purport to be providing a one-way interviewing process. She also questions the role of interviewers who funnel information into a narrow and objectified data set without personal meaning in terms of social interaction. Oakley feels that such traditional models present difficults for interview data which aims to validate subjective experiences of women.

Although much more structured data gathering was utilised in this study, an initial set of interviews with women may well have been subject to some of the problems raised by Oakley. Oakley highlights her claims by examining interviews in depth. She proposes a view of interviews as a "pseudo-conversation" where respondents often become socialised into replying in a desired way. This of course may restrict, bias or hide some findings. Problems with interviewer-interviewee relationships are highlighted especially in longitudinal studies where a rapport and relationship may develop (e.g. Laslett and Rapoport 1975). Oakley feels this is inevitable.

The options are to abandon such interviews. Yet this may lead to a data set which is restricted and does not attempt to address, describe or even acknowledge the subjective experience of women in their own words. On this basis an early pilot study (on ten women) is reported. The statements made by women are intended to provide a descriptive insight. Some of the issues raised by Oakley (such as interviewers as information providers, comments to the interviewer) will be examined systematically. Such items do not necessarily invalidate interviews as Oakley infers, but may address the very issues of communication which is then looked at more systematically in subsequent chapters.

Variables such as communications, stressors, pain and satisfaction are operationalised more systematically in most studies. However, in the early pilot interviews, these are reported verbatim. Wilkinson (1986) feels a need to acknowledge the consensus among women researchers of the need to develop theory based within experience. Workers such as Stanley and Wise (1983) and du Bois 1983) set out such needs explicitly. They feel there is a central

agenda "to address women's lives and experience in their own terms, to create a thory grounded in the actual experience and language of women" (du Bois p 108). Wilkinson suggests that there are three theoretical/methodoligcal issues which permeate research. Women look into their own experience, the knower is part of what is known and the process of such research may change the researcher. Yet very little evidence to support this is provided. It is unclear whether this applies specifically to research on women or whether it is a generalised methodological problem associated with most research. It can be argued that studies addressing this issue form a separate area of research. From a practical point of view such notions could paralyse all research. Hopefully research design can minimise such effects. Consistent use of interviewers can ensure that interviewer effects operate accross groups. The use of statistical criteria rather than intuitive values is surely an attempt to set objective levels for findings.

It is important to understand and acknowledge such problems in this research area. However, the main aims of the study were not directly concerned with monitoring such impacts.

1.9. CONCLUSION

This review of communications, anxiety and psychological state during pregnancy has shown a wide potential for application of theoretical understanding to the experience of women. Evidence exists that communication factors play a key role in medical encounters, that they are often the cause of dissatisfaction and that interventions may affect both communication and subsequent outcomes. On the other hand, pregnancy has been linked with many

psychological emotions without fully understanding the nature of such states, the extent of the experience and the role that communication factors may have in their aetiology, expression and experience.

Anxiety has been labelled as a negataive emotion associated with pregnancy. However, some studies show a possible beneficial role of anxiety in information seeking, cognitive rehearsal and preparation for surgery. Given that labour and childbirth may be potential stressors communication may be a key element in anticipatory fear and actual coping during delivery.

The cognitive hypothesis proposed by Ley (1977) to account for communication problems may be too simplistic. Much of the rationale highlighting the problems come from broad survey studies and subsequent interventions are not on the same populations. Many studies look at problems in life-threatening areas (such as diagnosis of a fatal condition such as cancer) and apply these findings to perhaps more trivial situations such as x-ray leaflets or the experience of a barium meal. Much of the literature is disjointed and no study exists which takes a comprehensive look at communication factors within a given area of medicine. This is crucial for consistency as well as any particular contribution that the condition itself may bring to the encounter. There may well be common factors in communication, but more specific items for individual patients in individual circumstances need to be addressed for a comprehensive understanding.

The role of communication and anxiety factors can be clarified with the aim of understanding the psychological experience of pregnancy.

This is of particular relevance if the experience of pregnancy and birth predicts subsequent outcomes to any extent such as parenting, child health, welfare and development and psychological well-being of parents and siblings after the birth. Such outcomes will not be addressed in this study but need to be remembered.

CHAPTER 2 - PILOT STUDY - EXPERIENCES OF CARE DURING CHILDBIRTH

"You just believe them because they are the medical profession. You just think what they say is gospel truth".

"Every night I was going to bed saying please God don't let this baby be born tonight. I was frightened to death - really frightened."

This chapter reports on the findings of a pilot study where women were interviewed to recount their childbirth experiences. Special note was made of communication and anxiety factors.

2.1. INTRODUCTION

Ley (1988) reports that despite the fact that attention has been focused on doctor patient communications for quite some time evidence for diminished dissatisfaction and increased cooperation is not forthcoming.

Ley (1988) comments on the wide range of methods used to measure satisfaction. These range from simple questions, multiple questions, ratings of satisfaction (DiMatteo et. al 1978, Ley et. al 1976), Lickert type scales (Falvo et al. 1980) and multivariate statistical methods. Despite the variety of measures, many workers have found that their satisfaction ratings correlate with other aspects of the doctor-patient interaction. Communications, in its broadest sense, covers the psychological component of the interaction related to information, inter-personal interaction and emotional well being.

As a starting point for studying pregnancy a pilot study was used to set out the experience of women. Women were interviewed to describe their childbirth experience. Content analysis was subsequently carried out on transcripts to examine communication aspects of the interviews and to highlight the role of information, inter-personal interaction and communications as described by women.

Such a systematic analysis of interviews may help highlight some of

the theoretical approaches discussed in chapter one. It is necessary to see whether such models can generalise to obstetrics to contribute meaningfully to understanding and future practice.

The experience of childbirth is a complex series of events over an extended period of time. Women were interviewed in unstructured interviews. The interview method has been examined by many workers, particularly Oakley (1981) who drawó attention to the role of the interviewer and the fact that the interview situation may be open to bias. The experience of the interview may in itself affect the interviewer. If this is so, then subsequent interviews may be affected. Such criticism may lead workers to examine the process of interviews more carefully or, at the other extreme, abandon the interview as a data gathering tool. Yet at the same time, Oakley (1981) and Gilligan (1982) point out the importance of women's voices in recording their own experience. With these methodological constraints in mind, pilot interviews must be viewed with caution. The interviewer was kept constant in an attempt to equally distribute 'interview bias' across interview situations. Transcripts were gathered and observers rated such transcripts. Much of the data is analysed in this way. At the same time, example of statement categories coded by observers are presented to allow for some of the original words of the subjects to be presented.

2.2. PILOT STUDY

Open ended interviews were audio-taped, transcribed and analysed. The analysis comprised an appraisal of the interviews in terms of communication and anxiety variables and a descriptive breakdown

reflecting the experiences of a group of unselected women and the extent to which communications and anxiety issues arose spontaneously. These themes would also provide a focus for the major aims of the thesis and lead on to a more detailed analysis of aspects of obstetric care in the light of common issues which emerged from the interviews.

2.3. METHOD

2.3.1 SUBJECTS

Local Health Visitors had been contacted by the Psychology department to provide names of mothers who had recently given birth. This list was generated in order to approach women to participate in the unrelated 'Child Development' course run at the University. A group of twenty mothers were approached from this list and were asked if they would be willing to recount their childbirth experiences as a pilot study in a reseesrch project. All mothers approached agreed to participate.

2.3.2 PROCEDURE

Interviews were conducted by the researcher. Women were given a choice of location. They could either be interviewed in an interview room at the University or in their own homes if they preferred. 12 women were interviewed in their own homes and 8 in an informal room at the University. The interviews lasted between

35 and 110 minutes. All sessions were audio-taped and subsequently every second interview was transcribed for analysis and discussion. Many of the themes were repeated and the sheer length of the interviews necessitated this selection.

This report covers the interviews of 10 births. The ages of the mothers ranged from 23 years to 35 years with a mean age of 26.13 years. 8 mothers were reporting on a first birth and two were reporting on a second birth. All women had their babies in hospital under Consultant care. There were seven baby boys and three baby girls.

The women were interviewed in an informal atmosphere. They were asked to recount their experience of childbirth from the moment they knew they were pregnant until they were back home with their baby. They were encouraged to give as full an account as possible and were assured of annonymity and confidentiality. They consented to the use of audio tapes. The interviewer presented minimal interruptions with prompting or clarification questions only.

2.3.3 DATA

The ten audiotapes were transcribed. For the first analysis they were coded by two coders unaware of the purpose of the study and working blind. The coding was to note down any 'attitudinal, appraisal or emotional' statements and simultaneously to note whether these were positive, negative or neutral. They were specifically instructed to omit statements referring to labour pains. Such statements were coded separately on a second sheet. The

purpose of this was to examine more closely Ley (1977) reports of widespread criticism by patients of communiation aspects of their interactions with doctors. They were given blank coding forms for the task. They read the transcripts and noted every time a statement appeared which would fit the coding criteria above. If such a statement was positive they would tick, if it was negative they would cross and if it was neutral they would mark it with a zero. In the event neither coders utilised the neutral category. A calculation was made of how many statements were coded and if they were positive or negative.

In the second stage, two coders working blind, read the transcripts and recorded occasions when communication, anxiety or information issues arose. This was done according to a set schedule. It served as a content analysis of the interviews. In the report examples of catagories will be presented. The schedule was generated from items emerging in the literature. The items and brief rationale were:-

1. BREVITY - Ley (1977) and Byrne and Long (1976) note that one possible explanation for dissatisfaction with communication may be the brevity of an interaction.

2. QUALITY OF INTERACTION Each time a qualitative statement about interactions was made this was noted. Positive and negative statments were differentiated. Ley (1988) discusses quality of interaction as one index of satisfaction.

3. EXPLANATIONS - Communication may be linked to information and explanations. This was recorded.

4. COMMUNICATION - Statements relating to communication were scored. Positive and negative statements were differntiated. This is in line with Ley (1977).

5. MISUNDERSTANDINGS Ley (1977) examines the role of misunderstandings in a cognitive explanation of satisfaction. Hence misunderstandings were recorded. This was difficult as one of the definitions of a misunderstanding is linked to a belief that one is correct despite being incorrect. Individuals may not have insight into their misunderstandings and such interviews may not tap these.

6. QUESTIONS TO INTERVIEWER Oakley (1981) notes that the interviewer is part of the process and records questions posed to interviewers. This is highly relevant in a study of communication where informational questions to the interviewer may reflect failure to have these addressed in the doctor/patient interaction.

7. DEFERRING TO EXPERTISE AND PASSIVITY Ley overlooks much of the literature on sick role, sick behaviour and patient passivity. This was noted here.

8. ANXIETIES One of the major themes of this study was to examine the existence, nature and role of anxiety in childbirth. Expressed anxieties were noted. These were subdivided into anxieties about:- Mother, Baby, Labour, Procedures and Other (in line with Kumar and Robson 1977).

9. PAIN MANAGEMENT Pain management is a key factor in labour management and this was noted.

10. UPSETTING INCIDENTS Another way to examine dissatisfaction is to note upsetting incidents.

11. ERRORS. Errors may be a cause for dissatisfaction and these were noted.

12. RULES AND INSTITUTIONALISATION Hospital environments can in themselves be stressors. Rule breaking may be a trigger of unsatisfactory communication or stress. Such comments were noted.

2.4 RESULTS

Women seemed to recall minute details of their experience. At the end of each interview women were asked whether they enjoyed recounting their experience and when they had done so previously. Each woman stated that they had enjoyed recounting their experience. Furthermore they all, without exception, stated that they had never told the full and complete story before in such a way.

2.4.1 APPRAISAL

Table 2.1 sets out the results for the two coders over the ten interviews for appraisal of emotional statements (excluding labour pain). Pearson product moment correlations were carried out to ensure coder reliability for numbers of positive and negative statements.

TABLE 2.1 APPRAISAL OF CARE BY WOMEN. COMPARISON OF TWO SCORERS.

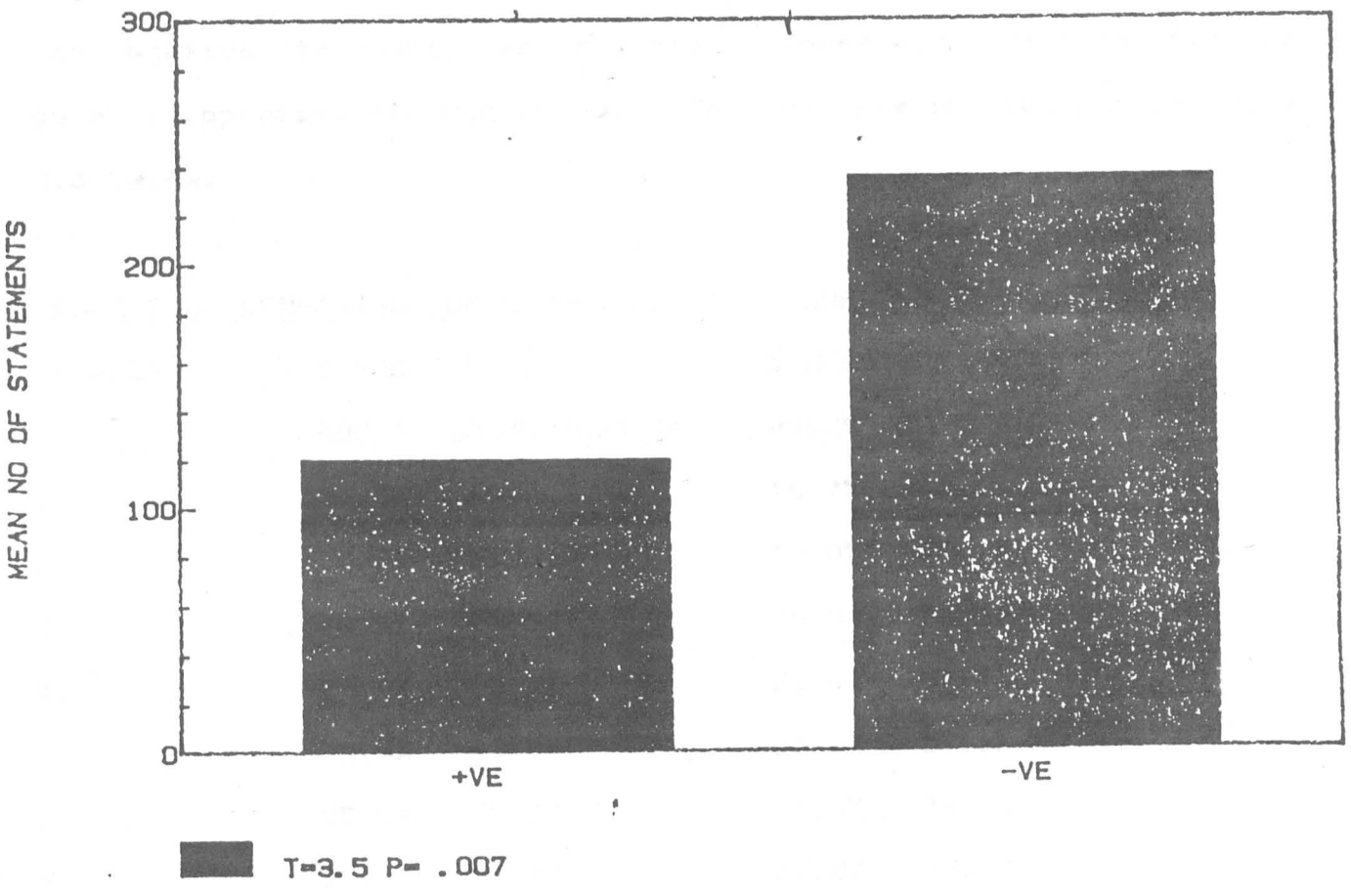
SUBJECT	+VE STATEMENTS			NEGATIVE STATEMENTS			TOTAL		
	CODER			CODER			CODER		
	1	2	MEAN	1	2	MEAN	1	2	MEAN
1	13	14	13.5	9	9	9.0	22	23	22.5
2	21	18	14.5	25	21	23.0	46	39	42.5
3	7	5	6.0	18	17	17.5	25	22	23.5
4	10	9	9.5	19	21	20.0	29	30	29.5
5	17	19	18.0	30	22	26.0	47	41	44.0
6	12	10	11.0	30	33	31.5	42	43	42.5
7	13	12	12.5	43	47	45.0	57	59	58.0
8	10	10	10.0	18	15	16.5	28	25	26.5
9	10	8	9.0	22	26	24.0	32	34	33.0
10	15	17	16.0	24	22	23.0	39	39	39.0
PEARSON R			.926			.930			.957
SIG			.0001			.0001			.0001

Pearson correlations show a high degree of agreement between the two coders : positive statements r=.926 p=.0001, negative statements r=.930 p=.0001, total number of statements 5=.957 p=.0001. Based on this high correlation, the appraisal score used was the mean of the

sum of the two coders.

A repeated measures t-test was carried out to see if there were differences between the numbers of positive and negative statements. The results of this analysis can be seen in table 2.2 below.

TABLE 2.2 POSITIVE & NEGATIVE STATEMENTS



From this figure it can be seen that there were significantly more negative statements than positive statements when women discussed their childbirth experience (t=3.47 p=.007 (df =9 two-tailed t-test).

A separate analysis was carried out coding appraisal of the labour experience. One may predict that labour may be painful and thus negative emotions may be expressed. Again the numbers of positive and negative statements were recorded. These were compared with the general appraisal figures above. The results are set out in table 2.3 below.

TABLE 2.3 COMPARISON OF APPRAISAL OF LABOUR AND COMMUNICATION

SUBJECT	% POSITIVE		% NEGATIVE	
	LABOUR	COMMUNICATION	LABOUR	COMMUNICATION
1	83.3%	60%	16.7%	40.0%
2	50.0%	34.5%	50.0%	54.1%
3	0.0%	25.5%	100.0%	74.5%
4.	28.6%	32.2%	71.4%	67.8%
5	75.0%	40.9%	25.0%	59.1%
6	25.0%	25.9%	75.0%	74.1%
7	22.2%	21.6%	77.8%	78.5%
8	50.0%	37.7%	50.0%	62.3%
9	20.0%	27.3%	80.0%	72.7%
10	60.0%	41.0%	40.0%	59.0%

Although the results failed to reach statistical significance when differences were compared, 6 out of the ten had a greater proportion of negative statements about communication than about labour pains.

It thus seems that communication is indeed an issue within the childbirth experience and as such deserves a more in depth analysis.

2.4.2 CONTENT ANALYSIS

Table 2.4 below sets out the ratings for the two coders on content items. Spearman Rho correlations were carried out to examine inter-observer reliability. This was done as some of the cells were small and did not meet the criteria for Pearson Product Moment correlation.

TABLE 2.4 CORRELATION BETWEEN OBSERVERS RATING ON CONTENT ITEMS

ITEM	SPEARMAN CORRELATION COEFFICIENT	SIG.
BREVITY	.92	.0001
QUALITY (+VE)	.76	.005
QUALITY (-VE)	.89	.0001
EXPLANATIONS	.3	.2 NS
INFORMATION SEEKING	.89	.0001
COMMUNICATIONS (+VE)	.86	.001

COMMUNICATIONS (-VE)	.44	.10
MISUNDERSTANDINGS	1.0	.0001
QUESTIONS TO INTVW	.60	.04
DEFERRING TO EXPERTISE	.47	.09
ANXIETY (TOTAL)	.92	.0001
ANXIETY (MOTHER)	.98	.0001
ANXIETY (BABY)	.97	.0001
ANXIETY (LABOUR)	.92	.0001
ANXIETY (PROCEDURES)	.76	.006
ANXIETY (OTHER)	.43	.10
PAIN MANAGEMENT	.96	.0001
ERRORS	1.00	.000
RULES	.76	.005
INSTITUTION	.90	.0001
UPSETTING INCIDENTS	.90	.0001

Observer reliability was high. Based on these findings the two scores were summed for subsequent analysis. Agreement on the sub-category of Explanations was not significant and this item was therefore excluded from subsequent analysis. A Correlation matrix between the variables can be found in appendix 2.

2.4.3 BREVITY OF INTERACTIONS.

Five women (50%) were noted for comments on brief interactions (ranging from 1 to 4 comments per interview). Examples of such statements are:-

"Examination by the Consultant - about 2 seconds"

"The doctor at the hospital sort of just comes along, does what he has got to do and is off again."

The number of such interactions correlated significantly with maternal anxiety statements (r=.6 p=.03) and there were trends in relation to information seeking (r=.4 p=.09), pain management (r=.44 p=.10)and upsetting incidents (r=.45 p=.09).

2.4.4 QUALITY OF INTERACTIONS

All women reported positive interactions (range 3 - 9 mean 5.1). Yet all women also reported negative interactions (range 4 to 16, mean 8.9). There was a significant negative correlation between positive interactions and deferring to expertise (r=-.7 p=.01). There was a trend for positive interactions to relate to fewer anxiety statements about the baby (r=.44 p=.10) and related to errors (r=.49 p=.07). Examples of such statements are:-

POSITIVE:-

"He was very helpful (G.P.) told me everything I wanted to know"

NEGATIVE:-

"You get prodded around by a student who then reports to whatever doctor comes in what he has seen - and the doctor informs

you"

"You never saw the same doctor twice, and they never told you who they were and they didn't say "Hullo, I am doctor..." you just sort of thought this was the doctor. It could have been anybody really, it could have been the porter."

"In hospital they just handed me a bottle and walked off"

"The doctor was a bit matter of fact you know, and you feel a bit sort of, I suppose, after all that....She didn't really say much."

"I have been kept waiting in that little room for up to three quarters of an hour on occasions. Where you are sitting thinking, have they forgotten me, what has happened, where has everyone gone? And there is no-one you can see".

2.4.5 PROVISION OF EXPLANATORY INFORMATION

Raters disagreed on this item. Observer 1 felt three women had not comment on this factor whereas observer 2 felt 8 women had not. Examples of such statements include:-

"They did a scan again two weeks after. Why I am not sure"

"But the thing they stick on the baby's head, they didnt really tell me what that was for".

"Oh no no they dont tell you anything. No they don't tell

you why they are doing anything, they just do it."

2.4.6 INFORMATION SEEKING

Nine out of ten women commented on seeking information. Indeed there was a significant correlation between information seeking statements and the extent to which subjects posed questions to the interviewer (r=.56 p=.07) and mentioned rules (r=.5 p=.07). Examples of information seeking statements are:-

"I could ask him (G.P.) a lot of questions which I could not ask at the hospital".

"I went to the N.C.T"

2.4.7 COMMUNICATION

Eight out of ten women made positive statements about communications (range of 1 to 4 statements). All women made negative communication statements (range 1 to 9, mean 5.3 statements). The higher the misunderstandings the lower the positive communication statements (r=-.47 p=.09). Positive communication statements also correlated significantly with fewer anxiety statements about the mother (r=-.53 p=.05). Negative communication statements correlated with negative interactions (r=.5 p=.05), statements about institutionalisation (r=.53 p=.05). Examples of such statements are:-

POSITIVE:-

"They were incredibly nice,they really were. A nurse came and sat with me and sat with me and told me how her mother makes coffee. I mean they just really wanted to distract me, I had the feeling and help to make it pleasant".

NEGATIVE:-

"And a young doctor came in to see me. And I was doing, I was counting away thumping the bench (Natural childbirth technique of relaxation) and he thought I was saying the last rites or something and he said "never mind dear I will get you something for the pain" and I said no I dont want anything".

2.4.8 MISUNDERSTANDINGS

Three out of ten women recorded misunderstandings. Misunderstandings related to negative quality statements (r=.47 p=.08), inversely with positive communication statements (r=-.47 p=.08), significantly with total anxiety score (r=.69 p=.01) anxiety about mother ((r=.59 p=.03), about baby (r=.49 p=.08). Examples are:-

""It looked terrible and I didn't realise it was dry blood it was like scabs really".

2.4.9 QUESTIONS TO INTERVIEWER

Seven women directed questions to the interviewer. This score correlataed negatively with explanation seeking (r=-.51 p=.07),

and positively with information (r=.57 p=.04). There was a negative correlation with anxiety about the baby (r=-.65 p=.02) and labour (r=-.58 p=.04). Examples of such questions are:-

"They decided he was lying the wrong way round. Which way should they be? (to interviewer) Anterior or post?"

"I could see this white fluid running up my arm. What was it doing to you anyway? (to interviewer)"

"I was told that I had to go into hospital because I had lost weight and theywanted to do some routine tests to find out why, whether it was just one of those things or whether it was that the baby was not receiving enough nourishment from the placenta - I think (to interviewer) this might be a real load of rubbish to you.

2.4.10 DEFERRING TO EXPERTISE AND PASSIVITY

Nine out of the ten women made statements deferring to expertise or showing passivity. (Mean 2.4 statements range 0 to 6). The higher the deferring score, the lower the positive quality of interaction score (r=-.71 p=.01)and the higher the negative quality of interaction score (r=.51 p=.06). Examples of such statements are:-

"So I said no, I had not thought of an epidural but he said because my blood pressure had gone up again - I dont suppoe they want you to be in stress. So I said if you think I should have one I will have one, but I would rather not."

"But again, I really didn't ask anything. I really didn't.

I just left it."

"They gave me my records sealed up in an envelope to take with me (to the hospital for admission). I wish I had now (opened them). I thought I could just undo those and put them in another envelope, they are not going to know, but I thought perhaps its best not to."

"I wasn't allowedto give up feeding (breast) and they would not give up under no circumstances".

"I had to have an injection to make me sleep. And I wondered then. I don't need aninjection to make me sleep...But I don't like injections and I said "do I have to", and they said "yes" so anyway I had the injection".

"I thought - well you just believe them because they are the medical profession. You just think what they say is gospel truth."

2.4.11 ANXIETIES

All women reported anxieties. This ranged from four to 16 statements. The mean number of statements was 9.5 (sd 3.9). When this was broken down, 7 women reported anxieties about their own wellbeing, 9 women reported anxieties about their baby, 8 women reported anxieties about their labour, 8 women reported anxieties about medical procedures and 9 women reported other anxieties. Anxieties about the mother correlated with brevity of interactions (r=.60 p=.03), inversely with positive communications (r=-.5 p=.05),

and with misunderstandings (r=.59 p=.03). Baby anxiety tended to relate inversely to number of positive quality interactions (r=-.4 p=.10), to misunderstandings (r=.49 p=.08) and an inverse relationship with questions to the interviewer (r=-.64 p=.02). Labour anxiety correlated with explanations (r=.47 p=.08) and inversely with questions to interviewer (r=-.58 p=.03) and deferring to expertise (r=-.51 p=.06). Examples of anxiety statements are:-

ANXIETY ABOUT WELLBEING OF MOTHER AND BABY:-

"My main worry was, was it allright, was it normal".

"I immediately told them (that I had had a German Measles contact), They weren't terribly upset about it. I was."

"And then he went, a few times that week (perhaps it was my imagination) he went red and rigid.."

"It (blood tests for German measles above) took an extremely long time. I was really really frightened. I just couldn't imagine what they could do if I would be five months pregnant and it would turn out that I did have the German Measles".

"And I knew everything that should have happened to me. But I was so frightened".

"I don't know it seemed a long time to me, like you know when you are having a car accident everything is happening slowly. And I looked and said is he allright, and they said oh yes, and I looked and thought he shouldn't be that colour and he is not making

any noise".

"When I was conscious and he said it was a baby girl I was worried then because it wasnt there, I could'nt see it and he said oh,it had gone to intensive care".

"I hadn't seen the baby either and they said that I wouldnt see it for forty-eight hours which was a bit worrying as I didn't know whether there was something wrong with her".

ANXIETY ABOUT LABOUR:-

"And I said dont leave me,dont leave me".

"Every night I was going to bed saying please god dont let this baby be born tonight. I was frightened to death really frightened"

"I couldn't find the bell, I was shouting for the nurse. No nurse appeared, I was ringing the bell frantically when I did find it."

"And I was terrible, I was so frightened and this pain was so awful."

"And all of a sudden I got really scared. It was a little room and it was the middle of the night."

"I became very very frightened. I remember I mean it was like a nightmare and I have very clear vivid recollection, tossing

from one side of the bed to another."

"I started to get frantic,I was very panicky and I said oh I want my husband."

ANXIETY ABOUT PROCEDURES:-

"Anyway, they gave me this knock out injection which I was a bit frightened of having. I have this fear of being knocked unconscious."

"They kept saying I wasn't pushing enough and at one point I thought oh gosh I was trying to stop myself because I thought oh you know I am not going to make (it). They were telling me to push and I was holding back."

2.4.12 PAIN MANAGEMENT

Nine out of ten women referred to pain management. There was a trend for Pain management to correlate with brevity of interactions (r=.43 p=.09).

"Anyway they gave me some drugs and I was on, I think, I can't remember - they didn't tell me what it was."

"I might have been making a fuss, I probably was. Because the pains were so awful, and they gave me some gas and air as well which really sent me spinning and in the end they took it off me because they thought I had much too much."

"I was in control nearly the whole time and I didnt take any pethidine although that was one thing that the nurses tried to persuade me to have".

"She broke my waters. This is where it was quite difficult and I was given gas and air". (entonox).

"I did say yes, but they did ask me. I then got pethidine. But I did not know anything about it. I really didn't and it didn't take away the pain, but it just sort of made me not quite there."

"The pethidine must have lowered down my consciousness quite a bit....When baby was finally born he did not breathe I did not even care, I did not even know. I did not even notice."

"I think there was probably, I think a tablet as well which was to calm me down. There was that and the rest of it I didn't really know what was going on."

"They like brought in the gas and air and I had an injection, I think".

"They just gave me the injection. They said we will give you an injection to help you to sleep, help you rest. But it had a really bad effect on me and I really regret having it."

"At this point the pains were fairly severe so they gave me an injection in the bottom (to interviewer) is it pethidine?"

"I think by this stage I was very dosed up with pethidine

2.4.12 UPSETTING INCIDENTS

Nine women reported upsetting incidents. The mean number of incidents was 3.5 with a range of 0 to 14. Upsetting incidents correlated with the brevity measure (r=.45 p=.09) and with anxiety (r=.58 p=.04). Examples of such statements are:-

"The tea lady. Well she came in and said only two (visitors) to a bed. And I said to one of the visitors oh you sould go. And afterwards we realised, well she is only a tea lady."

"So I went to the doctor who said I had come too soon. It amazed me".

"And I said can I have my husband with me can I have my husband with me. In a minute, in a minute she kept saying."

"And then the midwife came and the first thing she did was took all my clothes off and put them in a plastic bag. And I thought this is an incredible cheek".

2.4.13 RULES AND INSTITUTIONALISATION

Seven out of ten women commented on rules and nine out of ten described institutional effects. Rule scores correlated with deferring to expertise (r=.59 p=.04). Statements on institution

correlated with negative communications (r=.53 p=.05). Examples of such statements are:-

"I mean you are in a little cell really. I mean you can't go out because you are undressed and you cannot go in because there is someone there probably."

"Anyway it was Sunday the next day so they cant do it on Sunday."

"You were woken up just when you felt like going to sleep".

"The food was awful".

"Oh I must have been changing him on the bed and I got yelled at."

"They had father visiting in the evenings and my mother was absolutely dying to see the babyand she came up straight from London and it was the ward clark initially wouldn't let her in."

"You could only see your husband four hours in the whole day".

"I didn't know what to do with those cots. You weren't allowed to put them (the babies) on the bed."

"They gave you as much freedom as they could do while maintaining any state of order"

"I felt I had been enclosed there"

"I was summoned"

"But it was a bit military. I did feel when I came out that I had been released from an army camp."

"That is why I felt I had been let out of prison".

"A bit like a cattle market I suppose".

2.4.14 ERRORS

Five women reported errors. These scores correlated inversely with explanations ($r=-.5$ $p=.07$). Examples of such statements are:-

"They gave me my card with my blood group on and they copied the blood group onto my maternity record card, and when I got home they had put the wrong blood group on the card."

"After a few months there was this article in The Times where it actually referred to hormone tablets like I probably had at the beginning when I was pregnant and I got terribly scared".

2.4.15 KNOWLEDGE OF ONSET OF LABOUR

One area that has been stressed in the literature, especially by Ley, is the role of knowledge, especially accurate knowledge. This theme was examined with regard to knowledge of the onset of labour as a specific example and then knowledge generally. It was found that most women found their knowledge, in spite of class

attendance, or previous births, to be lacking.

1. "I am going in, I don't feel right. You must excuse me if they send me home again if it is a false alarm."

2. "I started getting pains and the doctor came...and said they were just testing contractions and it was the effect of the drip wearing off. I was having these awful pains, but they told me that it was just the drip wearing off. They told me I wasn't in labour so you believe them."

3."I just didn't realize. So I walked up to the nurse - I must have sounded really stupid - I said to her "do you think I could have some Aspirins" - she said yes, I will bring you some in a minute. I said I am a bit wet, I said (membranes rupturing) I must have been in quite a daze.

4."We came downstairs and then they seemed to stop and I said allright perhaps I will go back to sleep. You know I just kept thinking you know that nothing was going to happen."

5."I knew it couldn't be labour because they didn 't say that was how it started".

6. "I got this awful period pain right in the bottom of my stomach and I didn't know what it was".

7. "I was very uncomfortable but no pains or anything. And my husband was saying have you started and I dont know whether I had started or not. I mean I had never had a baby before".

8. "I had what were very mild contractions for quite a few hours which weren't as bad as I thought they would be so I didn't realise they were actually labour pains".

9. "I think the pains were quite bad and there was never like you learned in the NCT you had first stage and second stage. There wasn't. Like you should go into slow labour and it builds up. Well it wasn't there."

10. So luckily on the Friday night I started - I take it, because I didn't really know. They said to time your contractions when they came regularly but they didnt seem to.."

2.5 DISCUSSION AND CONCLUSION

From the rather detailed analysis it seems that these interviews highlight both the anxiety and the informational aspects of the obstetric experience. Indeed these two issues account for the greater part of the data. What does emerge is a group of women undergoing an experience which is often filled with panic, pain, confusion and pleasure. When their attenders provided input which was well received, women recalled this with praise and linked it with positive sequelae. Women tended not to link lacks of communication with negative sequelae but they did recall these lacks vividly. It is possible that "bad" experiences focused recall on unpleasant aspects of an interaction and vica versa. However, the data in these interviews tends not to support this. Women who reported positive experiences still criticised aspects of

communication and women who reported negative experiences still praised positive interactions. Indeed, it was rarely straightforward. There was generally a range of experience rather than uniformly bleak or extatic one. Women reported more negative than positive aappraisal of interactions. Summing up statements over the ten reports were:-

1. "I have thoroughly enjoyed my whole pregnancy, labour and being a mother. Totally. I would recommend it".

2. "I think it was allright, but in the long run I have got a lot to grumble about".

3. "What with that and everything else it just seemed awful and I got very depressed".

4. "So it was the stitches, the feeding and the jaundice. Everything else was fine".

5. "That is the only way I can fault it. But on the other hand I felt it was a much safer place to have a baby....I just think that is the choice. A bit unfortunate really."

6. "So apart from them being very anti-bottle feeding I found them allright really".

7. "It was eight to ten. It was two hours. The worst two hours of my life".

8. "Treatment in hospital was fantastic. I could not fault my treatment in hospital".

9. "I suppose two seconds later they had forgotten me. Which is their completely different attitude, and something there was definately wrong".

10. "Anyway, they just wish you all the best and that is it - you are off home - devastation!"

A major aim was to examine the role of Ley's cognitive theory together with Janis' ideas on anxiety and coping within the obstetric situation. Positive communications related to lower misunderstandings and fewer anxiety statements about mother. All women reported anxieties and indeed many of these were concerned with the wellbeing of mother and baby or labour and medical procedures. The higher the anxieties the fewer positive communications. Furthermore there was a correlation between misunderstandings and anxiety.

Besides providing a series of vivid descriptions, the study highlights the fact that there are more negatave than positive statements about communication and that variables such as communication, misunderstanding and quality of interactions relate to stated anxiety.

The next stage is to examine knowledge, misunderstanding and anxiety more systematically.

SUMMARY

In this pilot study ten women described their experiences. Transcripts were analysed to reveal significantly more negative statements than positive ones. In 6 out of 10 cases there were more negative statements about communication than about labour pain (although this did not reach statistical significance.) Anxiety, recorded as stressors, correlated with statements about brief interactions, misunderstandings and to fewer reports of positive quality of interactions. Eight out of 10 women noted positive communications but all women noted negative communications.

CHAPTER 3 - KNOWLEDGE LEVELS IN PREGNANCY

A group of pregnant women completed knowledge and attitude questionnaires to measures both knowledge levels and misconceptions. Doctors were asked to estimate knowledge levels as well as explain how they dealt with such information in their practice.

3.1 INTRODUCTION

If accurate knowledge is a critical ingredient in communication, knowledge levels during pregnancy need to be assessed. The issue of knowledge levels was raised in the pilot study. A more systematic investigation was embarked upon to present a breakdown of knowledge levels, to monitor desire for knowledge and to understand the flow of knowledge from the doctors' point of view.

According to Hall (1980) women attend an average of 11 ante-natal check ups to monitor the progress of the pregnancy and to carry out routine screening. The importance of these have been widely emphasised (Llewelyn-Jones, 1982). Failure to attend ante natal check ups has been used as a predictor of poor post natal outcome. The Spastics Society (1979) confirmed findings that late bookings (i.e. women who start attending ante-natal clinics later on in their pregnancy) incur a five times greater chance of perinatal death. However, factors which initially resulted in the non-attendance, such as poor socio-economic status, nutrition, housing or undesired teenage pregnancy, rather than the absence itself may account for adverse perinatal outcome. socio-economic status rather than anything else. Hall and Chng (1982) questioned the link between ante-natal attendance and obstetric outcome. They found that perinatal risk could not be reduced by administering more antenatal care. They found that increased ante-natal exposure led to overdiagnosis and pointed out the deficencies of the mass approach of antenatal screening. They concluded that the individual needs of

women needed to be provided in an effective and satisfying manner.

The percentage of defaulters to antenatal clinics is comparatively low. Reed (1981) showed a high proportion of women attended clinics regularly in spite of many adverse difficulties including long distances, lack of child care facilities for other young children and long waits. Oakley (1978, 1980) reported that women found ante-natal attendance to be a stressful event with long waits in uninviting surroundings (Cartwright 1980, Reed 1981, Oakley 1981). Some refer to impersonal handling (Kitzinger 1980), and feelings of being on a "conveyor belt". Given that the medical profession emphasises the importance of clinic attendance it would seem desirable to ensure satisfaction for those who do attend. This may well serve to encourage them to continue such attendance as well as encourage others to do likewise.

At ante-natal clinics, women undergo routine screening, including regular weighing, urine testing and blood pressure testing. Blood samples are taken for analysis at various intervals. Routine ultrasound scanning is becoming more and more frequent.

Ley (1977) reported dissatisfaction with communication in general medical settings and questioned the role of basic knowledge levels and misunderstandings in hindering the communication process in other areas. Cartwright (1979) also noted a discrepancy between the desires of patients for information and the actual practices of the caregivers in imparting such information.

3.1.2 PATIENTS LEVEL OF TECHNICAL KNOWLEDGE

Boyle (1970) and Metcalfe (1979) found low levels of technical medical knowledge in both the general population and groups of targetted patients. Redlich (1949) with a sample of 25 patients, showed that only 24% knew what a "lesion" was and 4% understood the terms "pathology" or "prognosis". Ley and Spelman (1967) provided many examples showing this trend. They monitored knowledge of lung cancer (Ley & Spelman 1966) and found that only 56% knew the symptoms, and close on a third thought the illness was not "very serious" and was "easily curable".

Boyle (1970) compared doctors' knowledge of locations of vital organs and those of a lay sample. He found that close on half his sample of lay people did not know the location of the kidneys, stomach, heart, lungs and 40% the bladder. Only a quarter of the sample knew the location of the intestines. Riley (1966) looked at the extent to which patients found medical instructions clear. Even though the instructions not to eat starch or sugar may be fully understood - notable numbers thought there

was no starch or sugar in products such as sweetened condensed milk. Roth (1962) noted that although a large proportion of his sample knew that acid was involved in the formation of peptic ulcers, when he probed deeper only a tenth knew clearly about acid secretion by the stomach. Misunderstandings about the source of acid may lead to non-compliance with dietry instructions. Coope and Metcalfe (1979) examined knoweldge of personal preventive medicine, treatment and the relevant use of health services. They found that 20% of respondents incorrectly thought that lumps due to cancer were always painful. Scores from multiple choice questions on blood

pressure showed a totally random scatter. 41.5% thought dermatitis to be contagious and 37.6% thought rheumatism to be a crippling disease. They cautioned that this may reflect "Commoner fears among the general population" than docotrs realize.

This lack of information about technical medical facts may directly contribute to adverse outcomes especially in the area of compliance and satisfaction. (Ley 1988)

Although low levels of knowledge and high levels of misunderstanding have formed the basis for Ley's cognitive explanation of patient dissatisfaction, few studies examine knowledge in a specific area of medicine and continue to study satisfaction, compliance and interventions in the same area.

Given the high amount of technical exposure during the ante natal clinics this study sets out to chart the situation. Dissatisfaction may exist due to straightforward lack of understanding on the patients' part. However there may be more complex reasons to account for the ways in which such lacks of information contribute to dissatisfaction. Fletcher (1973) noted, "a diagnosis given without explanation may cause either complacency about the need for treatment or unnecessary anxiety". Incomplete understanding may lead to unnecessary anxiety and may account in some instances for patients failure to comply.

If such knowledge gaps exist the level of understanding by doctors of such gaps may have bearing on how they treat patients.

3.1.3 COMMUNICATION OF INFORMATION

The passage of information and the consequences of various handling styles has been examined (Bosden 1962, Fletcher 1973, Standard and Nathan 1955) Doctors were reported as holding a common belief that patients should not be informed if they had a fatal illness and were dying. (Feiffel 1963).

Failures to tell patients diagnosis and prognosis of their illness may well result in lack of satisfaction with communication. These studies were carried out predominantly with cancer patients and it may be of interest to chart the extent to which the type of illness or condition affects the outcome and whether findings from this area apply to the area of obstetrics. Routine screening is in a sense a comment on the life of both mother and baby.

Janis (58) claims that information is the key factor for cognitive coping and rehearsal. He does not differentiate between subjects who do not seek out information and those who do, but are not informed. Presumably both groups would be unable to prepare appropriately.

3.1.4 CONCLUSIONS

Communication problems may well result from patients' lack of technical knowledge in simple terminology, body labels, implications of medical procedures and conditions. The situation may be further compounded if doctors are not fully aware of patients desires for explanations, if doctors are reticent about providing informationor if doctors are simply unaware of gaps in patients

knowledge. The answers to the problem are not straightforward as communication problems can arise when a doctor is quite willing to inform the patient. (Houghton 1968).

This study sets out to investigate the levels of technical knowledge in maternity patients, to chart misunderstandings and the perceptions of doctors about the direct areas addressed to the patients. Ley (1976) and Bertakis (1977) showed that increased understanding led to increased satisfaction. As a pre-requesite a baseline of information levels is needed. Ante-natal patients have complained of unsatisfactory communication. Increased technology means that a woman, who has in all probability never been admitted to a hospital previously, will be faced with a long and complex series of sophisticated medical events within the obstetric system. There are many areas of her experience which can be effected. Besides the necessity to comply with certain advice e.g. diet, iron intake it has been proposed that it is of considerable importance that she views her experiences positively both in relation to ther own and her baby's outcome.

Obstetric knowledge was monitored in a group of expectant mothers as well as their attitudes about such knowledge. A group of medics were also questioned about their perceptions of patients'knowledge levels and how they would normally impart such knowledge. Such data would reveal knowledge levels and uncover misunderstandings which may hinder satisfactory understanding and communication.

The investigation was divided into two parts. An initial survey was carried out on a group of expectant mothers and a second survey was carried out on a group of doctors treating expectant mothers. The

aims of the study were to assess:-

1. The level of technical knowledge in a group of expectant mothers.
2. Desire for information;
3. Misunderstandings on the part of the women and the doctors
4. Doctors' perceptions of women's knowledge levels.
5. Routine practices for imparting information.

3.2 METHOD

3.2.1 SUBJECTS

PATIENTS

A group of 70 women from the West Midlands participated in this study. They were contacted via their ante-natal clinic. Every tenth doctor on the local medical list was contacted (see appendix 3 for copy of standard letter). Doctors were informed about the research and permission was requested to interview patients of the practice. The response rate was low. Approximately 3% of the doctors responded. It must therefore be emphasised that the women responding in this study were already in contact with doctors or midwives who were sympathetic to psychological research and communication aspects of their care together with the potential importance of this aspect of care.

DOCTORS

The doctors responses constituted the second phase of the study. It was presumed that all doctors and hospitals would have telephones. Every tenth telephone directory was taken. Photocopies of doctors/Health authorities were taken. From these lists 100 names were randomly drawn according to a set of random tables. The resulting group was circulated (see letter in appendix 3) and requested to participate in the study. The response rate of this group was in the region of 20% usable responses. Again these results show a bias as the low return rate may indicate a nonrepresentative sample. A further 20% replies were received giving details of how lack of time prevent participation. Some doctors set out at length what they felt psychological studies of medical care were inconsequential and why they were unwilling to participate. One doctor from the Gorbels in Scotland replied explaining that due to the low working class nature of his patient population such studies were irrelevant. Of those who did reply, many did not complete the form about personal data (such as age, years qualified, sex etc.) and thus conclusions are limited. Others returned questionnaires which were partially completed. Of the 100 doctors sampled, 42 replies were received, only 20 usable. The data gathered may be data from a selection of doctors willing to participate in the study whose practices may differ markedly from those disinclined to participate.

3.2.2 PROCEDURE

1. GATHERING QUESTIONNAIRES

PATIENTS

Within the clinics each expectant mother attending for check up who was in the second or third trimester of pregnancy was approached by the researcher. They were informed that the reseasrch was not connected in any way with their medical care and no-one involved in their care would be given access to their replies. They were informed that the research was looking at obstetric knowledge. They were asked to complete the questionnaire withiout communicating with anyone. They were provided with a covering letter (see appendix 3) repeating instructions, a single copy of the questionnaire (see appendix 3), together with forms asking for brief personal details and feelings about information (see appendix 3). They were also provided with an addressed postage paid return envelope. They were assured of annonymity and confidentiality. One woman declined to take a questionnaire and 80% of those who took a questionnaire returned them. Data from 70 women resulted. The mean age was 26.5 with a range of 17-37 years (sd 4.2)

DOCTORS

Doctors were provided with similar questionnaires to the women (see appendix 3) and asked to estimate the percentage of women who would accurately answer the questions and how they dealt with the passage such information in their own practice.

2. QUESTIONNAIRE DATA

WOMEN'S QUETIONNAIRE (SEE APPENDIX 3.3)

This questionnaire was designed to tap knowledge, misunderstandings and attitudes towards such knowledge on 55 items and an attitude scale towards the information. The questions were generated by including questions on areas covered in ante-natal programmes and including terminology from health-care cards and childbirth guides. These covered:-

1) ANATOMY:- Here women were asked to label a diagram showing internal reproductive organs.

2) TERMINOLOGY FOR ANTE-NATAL TERMS:- Here the women were asked the meanings of terms they would come into contact with during their routine ante-natal care.

3) TERMINOLOGY FOR LABOUR/DELIVERY:- Here women were asked the meanings ofterms they would come into contact with during their forthcoming labour and delivery.

4) EXPERIENCE EXPECTATIONS:- These questions were concerned with the women's understanding of procedures and experiences she would be subjected to during her pregnancy and delivery.

5) ATTITUDES:- At the end of the questionnaire there were background questions about the woman regarding age, parity, and occupation. They also rated their feelings towards the knowledge,

whether they would like to have such information and the ease with which they could approach their doctors.

DOCTORS' QUESTIONNAIRE (SEE APPENDIX 3)

The doctors were given a form containing the same 55 questions. They were asked to estimate the percentages of primi and multi parous women of working and middle class whom they felt would be able to respond accurately to each question. They were then asked to report on the way in which each piece of information was dealt with in their practice.

3.2.3 SCORING

PATIENTS

Social class was estimated according the the registrar general's classification lists. Occupations of women were noted. Women were then divided into "Working" and "Middle" class.

The responses of the women were scored as follows:-

1. Two scorers, qualified in psychology and obstetrics, graded each sheet. The scorers worked blind.

2. The scoring was done according to a scoring schedule which allowed for the following scores:-

i) Where a woman left a space blank, did not know or answer or provided an incorrect answer, the scorer awarded a score of zero.

ii) A fully acceptable correct answer scored 2.

iii) A partially correct answer scored 1.

iv) Where women had misunderstandings (e.g. "A Caesarean Section is an operation to cut open the vagina.."or "Blood pressure checks for anaemia, anti-bodies and diseases"..) a note was taken.

The reliability of the scoring was calculated using Kappa (1967) analysis and the score used was a combination of the two scores. The Kappa results are presented below. Kappa was used as this calculation takes into account the distribution of score categories and the spread of results.

3.3 RESULTS

3.3.1 RELIABILITY

Table 3.1 below sets out the results of the Kappa analysis examining rater reliability.

TABLE 3.1 KAPPA SCORES FOR ALL QUESTIONS FOR TWO SCORERS.

QUESTION	KAPPA	QUESTION	KAPPA	QUESTION	KAPPA
1	.88	21	.64	41	1.00
2	.91	22	.74	42	.51
3	.93	23	.90	43	.68
4	.87	24	.75	44	.91
5	.89	25	.64	45	.77
6	.64	26	.57	46	.84
7	.66	27	.77	47	.90
8	.89	28	.79	48	.65
9	.61	29	1.00	49	.67
10	.70	30	.87	50	.94
11	.91	31	.76	51	1.00
12	.71	32	.83	52	1.00
13	.87	33	.89	53	1.00
14	.91	34	.82	54	.84
15	.89	35	.76	55	.81
16	.76	36	.64		
17	.85	37	.94		
18	.56	38	1.00		
19	.93	39	.62		
20	.79	40	.79		

6 items had a perfect correltion (1.00)

10 items had a correlation between .9 and 1.00

14 items had a correlation between .8 and .9

21 items had a correlation between .6 and.8

3 items had correlations between .5 and .6

0 items had correlations lower than .5

In the lowest group a check was made of the questions. Differences could be accounted for by the scoring of 1 and 2. There was clearly no differences in opinion on whether a question was incorrect (0) or not, simply if it was fully correct (2) or partially correct (1). Inter-observer agreement was thus high.

3.3.2. STRATIFICATION

The patient sample was stratified acording to social class and parity.

SOCIAL CLASS

The women were analysed for social class by by looking up the woman's own occupation in the Social Index of Occupations (1970). Some women listed occupation as 'housewife'. This category is not a category recorded in the Registrar General's list. A note had been taken of their educational qualifications. When a woman had entered "Housewife" for her occupation the job she was qualified to do was looked up. Where the woman had no educational qualifications and

she entered "housewife", her husband's occupation was used to determine social class. In appendix 3. there is a listing of the occupations/qualifications of the sample.

PARITY

Primiparous (Primi) women were all those having their first baby, and multiparous (Multi) women were all those having a second or subsequent baby. Table 3.2. shows the distributions.

TABLE 3.2 GROUPS OF WOMEN ACCORDING TO SOCIAL CLASS AND PARITY

	WORKING CLASS (WC)	MIDDLE CLASS (MC)	TOTAL
PRIMIPAROUS	N=17	N=29	N=46
MULTIPAROUS	N=13	N=11	N=24
TOTAL	30	40	70

3.3.3. DESIRE FOR INFORMATION

There were no significant differences according to class or parity factors in determining women's desire for information. The majority of women wanted all the information, a smaller proportion wanted some and only 1 subject did not want to know. The results of this question are shown in Table 3.3. below.

TABLE 3.3 WOMEN DESIRING INFORMATION.

GROUP	% RESPONDING INFORMATION DESIRE:		
	ALL	SOME	NONE
PRIMI W/C	76.5%	17.6%	5.9%
PRIMI M/C	72.4%	27.6%	0%
MULTI W/C	84.6%	15.4%	0%
MULTI M/C	72.7%	27.3%	0%

CHI square comparisons of information desire (all, some) by group=1.2, df(3), p= .8 ns

A chi square analysis of this distribution (excluding the solitary subject who desired no information) comparing those wanting all the information with those not wanting all showed class and parity factors were not significant in determining desire. The majority of women wanted all the information and the remainder wanting some.

3.3.4 SOURCE OF INFORMATION

Most women named a doctor as their primary desired source of information. The next most common source was a midwife. Medical sources, encompassing doctor and midwife constituted the major desired source of information. 47% preferred information from their doctor, 21% from the midwife and 32% from other sources (including books, classes and friends).

3.3.5. ABILITY TO APPROACH DOCTOR

Although the overall precentage of the sample naming a doctor as their first choice as information provider was 72.5%, many still felt unable to ask their doctor questions. In table 3.5 below the responses to this question are set out.

TABLE 3.5 PER CENT WOMEN WHO FELT THEY COULD APPROACH THEIR DOCTOR

GROUP	% NO	% YES
PRIMI W/C	35.3	64.7
PRIMI M/C	27.6	72.4
MULTI W/C	38.5	61.5
MULTI M/C	45.5	54.5

chi square=1.3, p=.7 ns

There were no significant differences according to class or parity factors which determined the ease with which a woman could approch her doctor, but the finding of interest is that an average of 34.3% of women felt unable to approach their doctor to ask for information.

3.3.6 ROUTINE TESTS

Many tests are routinely carried out on women, such as weight

recording, urine tests, blood pressure tests, blood sample tests etc. The women in this sample were asked how they would like such procedrues handled. The options presented ranged across:-

i) Instructed to have them done

ii) Explained why they needed to be done

iii) Explanations then the choice of having them done or not

Once again there were no significant differences in the spread of responses according to class or parity factors. However, the majority of women, across all four grups tended to want explanations and then choices regarding the procedures.

TABLE 3.6 HOW WOMEN WOULD LIKE ROUTINE TESTING HANDLED

GROUP	INSTRUCTED	EXPLAIN	EXPLAIN + CHOICE
PWC	0	35.3	64.7
PMC	0	17.2	82.8
MWC	0	23.1	76.9
MMC	0	0	100

When women were further questioned about tests they unnanimously wanted test results to be given to them. When details were asked 98% of the whole group wanted explanations of the meaning of such results. The two subjects who did not want to know the meaning were both primiparous working class women.

3.3.7 NON MEDICAL MATTERS

The women were asked if they would like to discuss non-medicl matters. Overall 89.9% wanted such an opportunity. There was a trend for groups to differ (chi square =6.3 (df=3) p .09). Middle class women were more likely to express such a desire (95.4%) compared to working class women (79.1%). However, despite the class difference a high proportion of women expressed a desire for such an opportunity.

3.3.8 SUMMARY.

The descriptive data reveal a desire for information by women regardless of class or parity. This desire was widespread and included a desire for information generally, test results, test explanations and discussions on non-medical matters related to the pregnancy. The degree to which such desires were met, may in part be reflected by the amount of knowledge women possessed (see later). It may also be hindered by the reticence with which mothers reported asking their doctor for information in spite of the fact that the majority of them would want their doctors as a primary source of information.

3.3.9. AMOUNT OF KNOWLEDGE

VALIDATION

The knowledge scores on 55 items for the 70 subjects was entered into a factor analysis. The factor analysis showed that the first factor accounted for 30.3% of the variance under scree slope

analysis, suggested that the second and remaining factors were non-significant. The second, third and fourth factors for instance accounting for 5.4%, 4.5% and 4.1% of the total variance respectively. A single factor was therefore extracted by components analysis. (Factor analysis results can be found in appendix 3.9) Based on these findings a total knowledge score was generated to reflect the sum of the 55 items.

KNOWLEDGE

Analysis of variance was carried out to examine the impact of parity and social class on Knowledge score. (Analyses for each of the 55 items can be found in appendix 3.)

The analysis utilised a 2 x 2 Parity x Social class independent groups design. Table 3.7 below sets out the results of the analysis of variance on the knowledge scores.

TABLE 3.7 ANALYSIS OF VARIANCE EXAMINING THE EFFECT OF PARITY AND SOCIAL CLASS ON KNOWLEDGE SCORE

SOURCE	S.S.	D.F	F	SIG
PARITY	692	1	0.6	0.4 ns
SOCIAL CLASS	36701	1	34.2	.0001
INTERACTION	181	1	0.2	.7 ns

MEAN KNOWLEDGE SCORES

GROUP	MEAN

PRIMI W/C	100.9
PRIMI M/C	150.3
MULTI W/C	104.1
MULTI M/C	153.7

Social class was a significant factor in knowledge score. Parity did not contribute significantly to knowledge score. It seems from this data that experience does not equate expertise.

Knowledge scores were then compared according to the responses on the attitude questionnaire. Results are summarised in table 3.8 below.

TABLE 3.8 KNOWLEDGE SCORE BY ATTITUDES

ATTITUDE MEASURE		MEAN KNOWLEDGE SCORE	SIG
Contact with someone who has a baby	Yes	137.5 (n=43,SD=35.5, df=68)	t=1.6 NS
	No	122.1 (n=27)	
Can easily ask		137.4 (sd=38 df=67 n=45)	t=1.8 p=.07
Cannot easily ask		119.7 (40.7, n=24)	
Instructed : yes (a/n tests)	no	158.5 (sd=40.3 df=36)	t=0.5 NS
		147.5 (sd=30)	
Explained why: yes		135.5 (sd=40 df=49,n=42)	t=1.0 NS
	no	149.3 (sd=19.2 n=9)	

Choice :	yes	136.4 (sd=39 n=54, df=56)	t=0.2 NS
	no	133.3 (sd=29.5 n=4)	
Explanation of results:	Yes	133.2 (sd 38.2 df 67)	t=2.6 p=.01
	No	61.5 (sd 7.8)	
Non-med discussion			
	Yes	135.3 (sd=36.5, df=67, n=63)	t=2.9 p=.005
	No	88.7 (sd=50.2 n=6)	

Contact with someone who had recently had a baby was not a significant factor in knowledge score. Women who could easily approach their doctor tended to have higher knowledge scores than those who could not (t=1.8, df=67 p=.07). Preference for testing routine did not significantly affect knowledge score. Handling of results did. Women who wanted explanations had significantly higher knowledge scores than those who did not want explanations (t=2.6 df=67 p=.01). Furthermore women who wanted non-medical discussions had signifcantly higher knowledge scores than those who did not want such discussions (t=2.9 df=67 p=.005).

3.3.10 INFORMATION SOURCE

Table 3.9 below compares knowledge and misunderstanding scores between the group of women who stated they turned to their doctor, their midwife, or other sources as their primary information source.

TABLE. 3.9 ANALYSIS OF VARIANCE OF EFFECTS OF DESIRED INFORMATION SOURCE ON KNOWLEDGE AND MISUNDERSTANDING SCORES

KNOWLEDGE

SOURCE	DF	S.S	M.S.	F	SIG
Between groups	2	35894	17947	16.5	.0000
Within groups	61	66311	1087		

GROUP	MEAN	S.D
Doctor (n=32)	143.9	34.9	6.2
Midwife(n=14)	86.7	41.4	11.1
Other (n=18)	144.2	18.9	4.5

MISUNDERSTANDINGS

SOURCE	DF	S.S	M.S.	F	SIG
Between Groups	2	37.1	18.6	2.1	.14 NS
Within Groups	61	555.0	9.1		

GROUP	MEAN	S.D.	S.E
Doctor (N=32)	11.0	2.5	.5
Midwife(N=14)	10.5	0.4	.1
Other (N=18)	12.5	4.6	1.1

There was a significant effect on knowledge score according to preferred information source. Women turning to their midwife for

information had significantly lower scores than those turning to their doctor or to other sources such as classes, books or family and friends. Source of information may be important in determining knowledge levels. Conversely it may that those with greater knowledge levels have greater ease approaching their doctor whereas those with limited knowledge find it easier to approach the midwife.

There were no significant effects on misunderstanding scores according to preferred information source.

3.3.11 CONTACT

The sociological literature claims that the breakdown of extended families results in a lack of experience with younger children. Women were thus asked whether they had close contact with anyone else who had recently had a baby. Overall 43 of the women had been in such contact, whereas 27 had not. There was no significant effect of class or parity on this distribution. (see table 3.13 below).

TABLE 3.10 CONTACT WITH OTHER MOTHERS. EFFECTS OF CLASS AND PARITY

GROUP	CONTACT	NO CONTACT
PRIMI W/C	9	8
PRIMI M/C	20	9
MULTI W/C	8	5
MULTI M/C	6	5

Chi square =1.4 df (3) sig .7 ns

3.3.12 MISUNDERSTANDINGS

Misunderstanding scores were calculated by summing the number of misunderstandings agreed by the scorers on each of the 55 questions. Class and parity factors were examined according to misunderstanding scores. The results are presented in table 3.11 below.

TABLE 3.11 ANALYSIS OF VARIANCE EXAMINING CLASS AND PARITY EFFECTS ON TOTAL MISUNDERSTANDING SCORE.

SOURCE		S.S	D.F	F	SIG
PARITY	0.6	1	0.1	0.8	NS
SOCIAL CLASS	9.3	1	0.8	0.4	NS
INTERACTION	1.2	1	0.1	0.8	NS

MEAN MISUNDERSTANDING SCORES

GROUP	MEAN SCORE
PRIMI W/C	11.2
PRIMI M/C	11.7
MULTI W/C	11.1
MULTI M/C	12.2

Neither parity nor social class were significant factors in total misunderstanding scores.

The numbers of misunderstandings were high. The percentage of women noting a misunderstanding on each question is appended. Differences in misunderstandings according to attitude groups are set out in table 3. 12 below.

TABLE 3.12 T-TEST COMPARISONS OF GROUPS ON MISUNDERSTANDING

VARIABLE	MEAN MISUNDER		T (DF) P	
	YES	NO		
1. CAN YOU EASILY				
ASK YOUR DOCTOR	11.3 (3)	12.0 (4)	.8 (67)	NS
2. INSTRUC A/N TEST	10.5 (.7)	12.5 (5)	.6 (36)	NS
3. EXPLAINED WHY	11.5 (3)	13.8 (5)	1.6 (49)	.10
4. CHOICE RE TESTS	11.7 (4)	13.3 (5)	.8 (56)	NS
5. RESULTS MEAN	11.6 (3.4)	10.5 (.7)	.5 (67)	NS
6. NON-MEDICAL DISC	11.5 (3.3)	12.2 (4)	.5 (67)	NS
7. CONTACT	11.3 (3)	12.0 (4)	.9 (68)	NS

Misunderstanding scores did not differ significantly according to attitude groups except in the case of test result explanations. There was a trend for those who did not want explanations to have higher levels of misunderstanding (t=1.6 p=.10).

There was no significant correlation between knowledge score and misunderstanding score (r=.07 (df=70) p=.27 ns). Unlike knowledge score, misunderstanding levels were not affected by desired information source. (mean score for those turning to doctors was 11.0 (sd 2.5); Midwife 10.5 (sd .5); other 12.5 (sd 4.6) df 2,61 S.S.=37.1, M.S=18.6 F=2.0 p=.1 NS).

3.3.13 QUALITATIVE DATA

The knowledge and misunderstanding data present a picture of overall ignorance. Parity does not alter this, but social class does. Misunderstandings were notable. As there are routine tests carried out on pregnant women and women almost unanimously commented on desire for results and explanations the data was examined further.

BLOOD TESTS.

There are six tests which are carried out on blood samples during pregnancy (Chamberlain 1980):- 1) Blood grouping 2) Rhesus 3) Wasserman 4) Rubella5) Haemoglobin 6) Alphafeto protein. Table 3.13 below shows the percentage of women within the individual groups who mentioned any of the various factors in their responses to the question on blood testing.

The standard of knowledge reported on this test was low. In addition to this range of responses, 42% of the sample were recorded as having misunderstandings about blood tests.

TABLE 3.13 PERCENT WOMEN ACCURATELY NOTING REASONS FOR BLOOD SAMPLE TEST

REASON	% MENTIONING THIS FACTOR			
	P W/C	M W/C	P M/C	M M/C
BLOOD GROUP	16.7	25.0	55.6	41.7
WASSERMAN REACTION	0	0	25.9	16.7
RUBELLA ANTIBODY	5.6	16.7	25.9	16.7
HAEMOGLOBIN COUNT	22.2	41.7	59.3	83.3
RHESUS FACTOR	11.1	8.3	37.0	33.3
ALPHAFETO PROTEIN	0	0	0	0

URINE TESTS

Urine sample tests are supposed to be carried out at all ante-natal visits. The tests are carried out to ensure normal levels of albumen and glucose in the urine. Table 3.14 below sets out the results.

TABLE 3.14 % WOMEN MENTIONING ALBUMEN OR GLUCOSE LEVEL TESTING AS REASONS FOR URINE SAMPLE TEST

REASON	% MENTIONING THIS FACTOR			
	P W/C	M W/C	P M/C	M M/C
Albumen	38.9%	77.8%	50.0%	66.7%
Glucose	16.7%	55.6%	25.0%	33.3%

Multiparous women were more likely to record the two reasons for this test yet many women did not know the reason for such a routine test with 34% of the sample having a misunderstanding on this item.

BLOOD PRESSURE

Blood pressure is another standard reading carried out during ante-natal period. Eclampsia (toxaemia of pregnancy) is still one of the major hazards in pregnancy. With good ante-natal screening this condition can be controlled to a certain degree (Llewelyn-Jones 1982). Raised blood pressure would be the first indication of such a condition and it is claimed that in modern obstetrics although pre-eclampsia is still found, worsening to eclampsia together with eclamptic fits can be controlled or prevented if a woman is picked up in the pre-eclamptic stage. Table 3.15 below sets out the responses on this question.

TABLE 3.15 % WOMEN KNOWING REASONS FOR BLOOD PRESSURE TESTS

REASON	% MENTIONING			
	PWC	MWC	PMC	MMC
CHECKING LEVEL	16.7%	40.7%	8.3%	25.0%
ECLAMPSIA (TOXAEMIA)	5.6%	33.3%	8.0%	25.0%

These figures do not reflect full knowledge for the majority of the sample. 21% of the women had misunderstandings about why blood pressure was taken.

3.3.14 DOCTOR'S DATA

The doctors exhibited significant differences in their estimates when class and parity were analysed as factors.

TABLE 3.16 DOCTORS ESTIMATES (ANALYSIS OF VARIANCE LOOKING AT CLASS AND PARITY AS FACTORS)

GROUP	MEAN	(S.D)	S.S	M.S	F
PRIMI W/C	112.7	(69)	205619	68540	15.9 ***
PRIMI M/C	161.4	(68)			
MULTI W/C	192.7	(65)			
MULTI M/C	254.4	(58)			

TUKEY ANALYSIS * DENOTES PAIRS OF GROUPS SIGNIFICANTLY DIFFERENT AT THE .05 LEVEL

	PWC	PMC	MWC	MMC
PWC				
PMC	*			
MWC	*			
MMC	*	*	*	

Doctors feel that both class and parity factors significantly affect knowledge score. This is in contrast to table 3.7 which showed that in reality although class was a significant factor on all knowledge category scores, parity was not. The doctors seemed to

associate both parity and class with expertise. They feel that a higher proportion of women would have knowledge if they are multiparous and furthermore feel that middle class women are more likely to be informed than working class women.

It seems from these findings that doctors feel that gathering of experience is equal to gathering of expertise. The results from women tend not to support this. It is not surprising as an experience is not necessarily understood even if one has been exposed to it. Knowledge is reliant on factors such as explanations information and understanding.

Doctors were then asked if they give this information to women and how they would normally deal with such informational needs in their practice. Doctors presumed a mean of 14.95 items over the 55 questions were known. The remaining items were presumed not known (mean 38.6). Matched pair t-tests shows that doctors presume significantly more information not known than known ($t=5.2$ $df=20$ $p=.0001$).

Doctors were asked how they handled information imparting in their own practice. Figure 3.17 below sets out the pattern of information handling. The main avenue for information imparting was on request by the patients. This is in sharp contrast to the reticence reported earlier by patients in approaching their doctor for information. A small amount of information is not given and some in special circumstances only. The remainder of the information was

either to be conveyed at ante-natal clincs or mostly at ante-natal classes. Given that a high proportion of women do not attend such classes, this avenue may be limited to attenders. Furthermore ante-natal classes are usually run by midwives and hence where the preferred source of information is the doctor then this information avenue would not be met.

3.4 DISCUSSION

3.4.1 LEVEL OF INFORMATION

There were large deficiencies in knowledge and these are further compounded with areas of misunderstanding.

In Ley's cognitive model knowledge is a fundamental element in communications. This study reflects that there are lacks in technical information, including both terminology, knowledge of procedures and knowledge of one's own body.

3.4.2 DESIRE FOR INFORMATION

Nearly all women, despite class and parity, desire information. The success with which they get such information however, differed as shown by the different knowledge scores. Women looked to the medical profession for such information. Most women chose their doctor or midwife as preferred source of information. Yet almost a third of this group stated they had difficulty approaching their doctor. Such difficulty was not affected by class or parity factors. Desired information source was a significant factor in

knowledge score. Women who turned to their doctor our outside agencies had higher knowledge scores than women who turned to their midwife. It may be that social class factors operate and working class women are more likely to turn to a midwife.

Women not only want technical information but they want test results and explanations. A high number wanted to be given information to make choices about tests. Without such information choice is effectively denied to them.

Social class was a significant factor in knowledge score. Middle class women had higher scores than working class women. Surprisingly, parity had no such effect. Parity which involves "experience" does not equate with expertise. Women who have been through an experience do not necessarily gain in expertise at the same time. Indeed, it seemed that parity provided more realistic attitudes about the success with which one would get information (or not get information) rather than show a learning by experience effect. If a woman was not informed on a first pregnancy on a subsequent occasion she may still be uninformed. The doctors however, did not pick this fact up. There were overwhelming presumptions by the doctors that the women's knowledge scores would be affected by class and parity.

Information needs were not met by turning to the medical profession. Most doctors referred the majority of questions to 'ante-natal classes'. Many women do attend these classes. However, they are not given by doctors and it seems contradictory that the desired information source is always absent from information imparting exercises. This can become particularly relevant in the area of

choice. Choice options set out by the midwife or health visitor at the class may not be options entertained by the Doctor who is carrying out the procedure on the day.

It may be that doctors respond more postively to middle class women. The picture which emerges from this study is a general low level of knowledge on the one hand with many misunderstandings, and a failure by the doctors to note these. Ley emphasises that accurate knowledge is a pre-requisite for good communications and Janis notes that such information is a vital ingredient for adaptive pre-operative cognitive rehearsal and for accurate anticipation of stressful events. It would not be surprising, based on this data, if the women did experience stressful events which may in part, be accounted for by incomplete or inaccurate knowedge. For example a high number of women felt that drugs given during labour would not effect the baby in any way at all. Women had unrealistic expectations about who would be present during labour. Certainly many of them may be surprised to be delivered by a student midwife when they are expecting to be attended by the Consultant Obstetrician. Episiotomy rates are very high. At the time of the study they were above 90%. Yet over half of the sample had misunderstandings about episiotomies. Such factors may lead to a group of newly delivered women unprepared to cope with episiotomy pain and discomfort.

3.4.3 RELATION BETWEEN INFORMATION AND ANXIETY

Reynolds (1978) has claimed that a lack of information could result in anxiety and fear. This contention could be followed up in the light of these results. Informationdeficits were apparent despite desire for information. As doctors direct most information to ante-natal classes it will probably not be forthcoming in the form desired by the patient. It is unclear whether information from a source other than the desired source is perceived as qualitatively different by patients. Stimson and Webb (1975) showed that satisfaction was directly relatd to expectations. Melzack Weisz and Sprague (1963)showed that source and style of explanations affected pain tolerance. Source and style of explanation may be important in Obstetrics as well.

3.4.4 INFORMATION AS FEEDBACK

Ante-natal checks are essentially preventive screening. Mothers may find positive test results reassuring indices of maternal and foetal wellbeing (Kumar 1978). Yet mothers in this study seemed to be unable to record the factors associated with the routine screening tests such as blood, urine and blood pressure tests respectively. Mothers specifically stated that they wanted results to such tests and furthermore some would like the option to choose between testing. Without such information choice is not a viable option. Why is it that women who want to know about the tests, undergo them routinely and are primarily concerned with the interpretation of

their results show low levels of knowledge?

There are a series of possible explanations in the literature.

3.4.4.1 DIFFICULTIES IN APPROACHING THE DOCTOR

Byrne and Long (1976) have examined a large number of doctor/patient interviews and found that about three quarters of the content of the interactions were doctor initiated. They examined their consultations and reported that they tended to fit a six point model.

1. Doctor establishes relationship
2. Doctor attempts or succeeds in discovering reason for attendance.
3. Doctor conducts verbal/physical examination
4. Doctor, doctor and patient, patient (in order of probability)
   consider the condition.
5. Doctor (and occasionally patient) set plan
6. Termination of Consultation (usually by doctor).

Although an ante-natal interview may differ in that the reasons for attendance may be clear, the model may still describe the typical interaction. Given such a series of steps it seems that the patient has little opportunity to contribute. This would be made more difficult if the patient was reticent to ask the doctor in the first place. Moreover, consultations were short (mean lenght of 5.2 minutes in Byrne study) and if the doctor terminated the consultation the patient would have little time for information

gathering or questioning. Bain (1979) reported on a content analysis of a large number of consultations and recorded that doctors initiated 80% of interactions which were concerned with "medical matters".

3.4.4.2. UNDERSTANDING

Ley (1977,1988) has looked at the role of understanding and misunderstandings in the acquisition and recall of information. He has recorded how active misunderstandings hinder accurate recall of information. By utilising techniques to improve understanding such as clarity of material, serial ordered points, specific rather than generalised statements he has been able to improve information levels in medical subjects.

There were many misunderstandings in this study. If information imparting is brief or referred to classes it may well be that such misunderstandings are not addressed. If misunderstandings do indeed hinder accuracy then this may account for knowledge gaps. Ley (1977) has shown links between knowledge levels and subsequent understanding, satisfaction and compliance. Understanding levels in this study showed both gaps and items of misunderstanding. Recall and direct satisfaction were not measured in this study. In subsequent research it may be of interest to examine the relationships.

3.4.5 INFORMATION IMPARTING CHANNELS

Lastly this study has shown that in spite of differences in information level, women unanimously desire information and state as their primary source, their doctor. From the doctors' responses it seems that the majority of information imparting is referred to ante-natal classes. This would mean that the proportion of women who do not attend such classes, for whatever reason, will not have this need met. Those who do attend classes will be given information from an individual other than the doctor.

3.4.6. ANXIETY

Janis (1958) has put forward a model linking anxiety level with information seeking. According to these ideas a different level of anxiety would relate to different information needs and information seeking. This of course raises an interesting point where adjustments in anxiety or information may have reciprocal effects. This would provide a good entry point for input.

There is another aspect relating information and anxiety. It has been recorded (see Ley 1977) that anxiety level may hinder information level as anxious patients recall less, take in less and are so focussed on their primary anxiety that they fail to pay attention to other aspects of a situation and may not even take in information presented to them.

Anxiety was not directly measured in this study. This is a link with information which will therefore be taken up in subsequent studies to see if there are interactions with anxiety, information

and recall.

Although this study gives an insight into knowledge levels and desires there are methodological considerations which may limit the extent to which these findings could be generalised. The sample of women were drawn from clinics run by doctors who were sympathetic to psychological research. As such they may not be representative. The response rate from the doctors was low and the small numbers give a limited picture. A refinement of the study could have allowed for attending doctors to make predictions for each woman. The response rate of the women, 80% was acceptable, but may exclude a significant group of women.

The study can serve as a base for eliciting questions which could be addressed in more controlled ways.

4.4.7 CONCLUSION

This broad informational study was carried out in order to attain an insight into knowledge levels, misunderstandings and desire for information in a group of women during ante-natal care.

Social class was a significant factor in determining knowledge level, but parity was not. Gathering of experience does not equate to expertise. This may be further compounded by the fact that doctors feel that experience is equal to expertise and presume multiparous women to have higher knowledge scores than primiparous women. Many women stated they wanted their doctor to be their

primary source of information. Doctors on the other hand refer most information to ante-natal classes.

Information gaps recorded in other areas of medicine seem to be prevalent in the Obstetric area. This study confirms this general point, and also catalogues the specific knowledge gaps with regard to routine ante-natal screening, terminology, and experience expectations.

The ante-natal period can be seen as a phase of screening and foetal development as well as a preparation for labour. The next studies will look more directly at the effects that knowledge has on labour especially in the light of the gaps in experience expectation knowledge. Subsequently manipulating knowledge and communication about ante-natal screening can be examined systematically.

Janis (1948) states that information seeking is a tool for cognitive coping to prepare patients for impending stress. He feels that the level of preparation determines subsequent coping. Ley feels that basic knowledge is a pre-requisite to good communications.

SUMMARY

A group of 70 pregnant women in their 2nd and 3rd trimester completed a 55 item knowledge questionnaire to tap knowledge levels and misunderstandings. Social class was a significant factor in overall knowledge score, whereas parity was not. Most women desired knowledge. Women who could not easily approach their doctor for information tended to have lower knowledge scores as did women who did not want explanations or non-medical discussions. Women turning to a midwife as their primary source of information (as opposed to their doctor or outside sources) had significantly lower knowledge scores. Source factors, social class and parity were not significant in misunderstanding scores. Women who were given explanations of routine tests tended to have fewer misunderstandings. Other attitudinal categories did not differentiate misunderstanding scores. Despite a desire for information about tests, qualitative analysis revealed many knowledge gaps and misunderstandings. A group of 24 doctors scored the questionnaires and perceived both class and parity as significant factors in knowledge score. Routine information handling by such doctors revealed a pattern of information by request, in special circumstances and the bulk referred to ante-natal classes. In view of the reluctance of many women to approach their doctor and the fact that some do not attend classes their information needs may go unmet.

CHAPTER 4 - EXPERIENCES OF PAIN MANAGEMENT DURING LABOUR

Women receiving Pethidine, Epidurals and no drugs/short periods of entonox inhalation were compared in terms of their pain experience, mood, information and satisfaction. They were questioned immediately after delivery and again four weeks post partum.

4.1 INTRODUCTION

One of the major stressors of pregnancy is labour, particularly labour pain and pain management. In chapter three women commented about pain during labour which emerged as a source of anxiety. Many women wanted information about labour and went to ante-natal classes for this. Anxiety related to pain, pain management, and concern for the well being of both the mother and the baby.

The pilot study revealed many concerns. Women were often confused by knowledge gaps and were fearful when left alone, or in ignorance. Failure to explain and bad communications were commented on at length. Conversely productive communications were particularly noted. Knowledge was examined more systematically in chapter 4 where levels varied according to class but not parity. Desire for knowledge was high and would be preferred from doctors and midwives. Doctors did not perceive knowledge levels accurately and tended to refer knowledge transfer to ante-natal classes. Specific misunderstandings about labour and pain management were apparent. This study was set up to look at pain experience, mood and satisfaction in a group of women having babies with different forms of pain management.

Is there a link between communications and pain or pain experience? Can the comments made by women with regard to pain and anticipation of labour be related to input in the doctor-patient relationship?

This will be examined more closely.

4.1.1 CURRENT PAIN MANAGEMENT PRACTICES IN LABOUR

Rosen (1977) comments that there was no convincing evidence that "increased maternal or perinatal mortality or lasting morbidity follows the proper use of pain relief". Although no studies have looked at the relation between increased usage of analgesia with the move to hospitals, there is high usage of analgesia during labour in the U K. Chamberlain et. al. (1975) found that just over 68% of mothers in a British Births Survey used pethidine in labour. There are no comparable figures for epidurals. The study by Morgan (1980) looked at epidural analgesia in 854 consecutive vaginal deliveries. She reports that "59% of primiparae and 73% of multiparae who received epidurals had intended to do so before the start of labour". She found that epidural analgesia was "by no means as effective as many authors have claimed". 18% of the mothers receiving epidurals and 11% not receiving epidurals were dissatisfied with their experience. This dissatisfaction seemed to be accounted for by mode of delivery, specifically increased forceps use. 46% of the epidural group had spontaneous delivery compared to 91% in the no epidural group. This could not be accounted for by bad obstetric indicators as the majority of epidurals had been administered at the patients own request. She further found that the experience of labour related to psychological variables. She claims that women although "chose" epidurals it is unclear how the choice was generated and to what extent the norms of the hospital or persuasions of the doctors affected such a choice.

The use of epidurals is on the increase and its uptake varies from

centre to centre depending on the availability of a trained anaethetist. Pethidine, on the other hand can be administered in the community by a midwife. Amounts up to 200g do not need a doctor's prescription. Within the hospitals, the doctors prescribe the drug, but the midwives are allowed "considerable latitude in timing the dose" Rosen (1977).

The commonest ways of dealing with labour pain in England today is:-

1) Relaxation/brief periods of Entonox inhalation

2) Pethidine (150 to 200 mg doses) one to two doses, administered intramuscular.

3) Epidural anaesthesia - insertion of bupivacaine into the epidural space

Morgan (1980) noted that women did not report "complete relief of pain" after epidural administration. Indeed, 46% of primiparae and 44% of multiparae experienced pain after administration.

Klein (1980) reports that there is a considerable variation in the amount of analgesia used when comparing Consultant wards with G P wards - even when one controls for obstetric problems. His conclusions were that in GP wards there was a lowered uptake of Pethidine, and almost a non-existence of Epidural analgesia. However, these studies were carried out in Oxford and it is unclear whether they reflect a nationwide or a local trend. Cartwright (1979) confirms this distribution - she looked at 37 different hospitals where at least 20 of the sample of her study gave birth. She discovered that in teaching hospitals the epidural rate was 20% and this fell to 3% in "non-teaching " institutions, and 3% in

maternity hospitals.

The use of technology often sets up a series of events where further technology is often needed to combat side-effects of the initial intervention. It is then not often possible to distinguish effects from the primary source or future procedures.

Thus although the forms of technological advances today are varied, during the delivery they can be catalogued as a series of options involving either machinery or chemicals which bring about various effects. As soon as these are employed to any extent, the childbirth has become a medical event and the involvement with the doctors and subsequent effects of the doctor/patient relationship is inevitable.

There are only a few studies examining the effect of pain management on the mother, although some work has been carried out (Richards 1975, Rosenblatt 1979) looking at the baby. Richards found differences on a small sample between those receiving Pethilorfan (Roche Products, Pethidine to Levallorphan Tartrate 100:1.25) and those who did not. The "drug" group babies were significantly more likely to have one of three eye conditions, "strabismus, nystagmus and sunset signs". There was a tendency for the the drug group babies to have reduced "non-nutritive sucking" rates and reduced responsiveness to the removal of a teat. The "drug" group fed for shorter periods, showed increased interruptions and needed more stimulation to suck during feeds. They suggest that this may influence maternal/baby interaction. They gave no measure of drug uptake levels. There were no significant variation due to variables such as maternal age, parity, education obstetric history (notably complications) baby sex, birthweight or nature of feeding (breast or

bottle).

In a review of effects found in previous research Rosenblatt et all (1980) notes that these cover "respiratory depression, slow inhibition of responses to stimuli, poor occular control, hypotonus, weak reflexes, less attention to visual stimuli, decreased alertness, decrease social interactions with examiners, EEG abnormalities, difficulties in arousing, reduced amounts of quiet (dep) sleep, greater irritability, slow sucking rate, weak sucking, reduced consumption and more stimulation required from the mother when feeding". However, these only "pertain to the neonatal period" and few studies have looked at longitudinal variables. Yet if Richard's contention that these factors may affect the maternal infant interactions can be upheld, even if this is confined to the neonatal period, it could be possible that patterns are set at this early stage and certainly models that would look at the continuum of caretaking casualty could not discount the possible impact of such factors on future development.

In the Rosenblatt study gas chromatography was used to measure both the drug administration levels and levels of uptake in maternal vein and umbilical artery readings. They generated thre groups, 35 not having drugs, 51 pethidine and 59 bupivicaine (epidural anasthesia) subjects. The Rosenblatt group used a measure of half-life concentrations of the pethidine to reflect level of concentration of the drug in the recipients' blood and the period of time it took to dissipate. They found that there was reduced alertness and poorer visual and auditory responses over the first six weeks for both bupivicaine and pethidine babies. Actual maternal dose was not a predictor of infant behaviour, although high maternal dose did

affect maternal interaction with the infant in the first 20 minutes after delivery when looking at the pethidine group. Klaus and Kennel have stressed the importance of the first interactions between a baby and its mother. If this is interfered with by the state of the mother due to pethidine it could hinder the processes that Klaus and Kennell feel are crucial for future relationship between the baby and its mother. Rosenblatt and colleagues did not take this possibility into account.

Enkin (1982) in a reviewof studies on the efficacy of ante-natal classes, found, despite methodological and sampling difficulties that there was a consistant lowered uptake of analgesia in prepared mothers. This may be as a result of knowledge or may be artefactual. Mothers who wanted less analgesia may have attended classes. Classes may have trained mothers to have higher pain tolerance or even brainwashed mothers into accepting more pain or heightened fear of medication. There is no evidence that prepared mothers "feel" less pain. Melzack et. al. (1981) studied pain in labour by questioning 141 consecutive women in labour and found that the average pain intensity was extremely high. There was a wide range of scores and primiparous women rated pain significantly higher than multiparous women.

4.1.2 PSYCHOLOGICAL APPROACHES TO PAIN

Rosen (1977) claims that "fear and anxiety increase pain and the need for pain relief". On this basis he stresses the importance of the attitudes of those with whom the mother is in contact. He also notes that although the majority of mothers find labour painful in all societies their reactions to it are different. Most women

continue to have babies. What is currently known about pain and to what extent can it be applied to the labour setting?

Pain has been described and recorded by many workers. Weisenberg summarises the psychological intervention strategies and their effectiveness in reducing reactions and experience of pain into seven areas.

1. SUGGESTION AND PLACEBO - Beecher (1972) showed that 35% of patients with pathological pain obtained relief with placebos. This interesting phenomenon was further investigated and revealed that there was a link between increased initial anxiety and the extent of placebo relief. Such a finding could be of enormous importance in the labour area where there are claims of heightened anxiety coupled with a pain experience. Melzack, Weisz and Sprague (1963) demonstrated the importance of good doctor patient relations in successfully using suggestion to divert pain tolerance.

2. HYPNOSIS - This is an often used and hotly debated tool used in controling pain. Chaves and Barber (1974) emphasise the readiness of the individual to accept suggestion as a pre-requisite to success of this form of intervention. Again there is the finding (e.g. Shor 1962) that the presence of anxiety heightens the impact of the intervention.

3. RELAXATION, BIOFEEDBACK AND DESENSITIZATION - These methods combine in reducing anxiety and fear. (see Wolpe 1969). Such premises are based on the underlying assumption that anxiety and pain are linked. Weisenberg concludes that although relaxation can be effective there are conflicting findings (see e.g. Lehrer 1972)

and deeper understanding of optimum conditions are needed to clarify the role of relaxation. Relaxation is used as a tool in labour pain management (see for e.g. Dick Read 1944).

4. COGNITIVE DISSONANCE, ATTRIBUTION AND LEARNING. - Festinger (1957) has proposed that when cognitions and actions are dissonant the individual takes terms to resolve the dissonance. Zimbardo, Cohen Weisenberg, Dworkin and Firestone (1966,69) derived a model from this theory showing how commitment and justification could affect pain reactions.

Attribution theory, on the other hand, examines how individuals perceive events and notes that people seek such causes and explanations. Utilising this theory has proved useful in increasing pain tolerance. Davidson and Valins (1969) increased tolerance by teaching subjects to attribute it to their own efforts rather than the effects of a pill. This ties in with Bem (1965,1967) who claims that individuals make attributions about themselves and their intentions by being aware of and monitoring their own actions. This could allow someone to increase tolerance by observing one's own ability to withstand pain levels.

Learned helplessness could increase pain perception. Fordyce (1976,78) showed that learning new behaviours associated with well rather than "pain" related actions could increase tolerance, decrease the extent to which individuals resorted to pain reducing medication and increase activity levels.

5. CONTROL AND CHOICE - Control over the pain situation has been shown to reduce both pain behaviours and subjective reports of pain

experience. Indeed Robinson (1972) succeeded in creating this effect when women were allowed to self adminster pethidine in labour. Bowers (1968) explained this phenomenon by relating that decreasd control resulted in increased anxiety. Again the link between anxiety and pain has emerged. Staub, Tursky and Schwartz (1971) accounted for this effected by linking control to predictability. They claimed that it was uncertainty that increased anxiety and control provided an element of certainty which in turn reduced anxiety. In experimental settings they showed that subjects who were given control over the intensity of shocks tolerated higher levels and reported less discomfort.

This area has been reviewed by Averill (1973) who distinguished between behavioural, cognitive and decisional control. Other factors such as knowledge of how well the control is working may interact. The exact nature of control is also unclear. Should such control always be self control or can it be handed over to higher status trusted individuals such as doctors?

6. PRIOR PREPARATION FOR PAIN - Egbert. et. al. (1964) catalogued the impact of prior preparation on pain and showed prepared subjects needed less analgesia and were discharged earlier after their operations. The preparation included exercises which may themselves have contributed to enhanced recovery. Provision of preparation may in some way provide "control" as discussed above and it is unclear whether it is the preparation itself or the attained control which has the impact.

Janis (1958) looked at the link between anxiety and preparation. He showed that moderate levels of pre-operative anxiety led to optimum

preparation strategies. The beneficial effects of these were seen in better post operative adjustment. Higher and lower anxiety subjects did not fare so well. Janis attributed this to too little or too much anxiety which led to over-preparation on the one hand or denial on the other. Both of which left subjects ill prepared after the surgery to cope with the impacts of their experience. This model has been criticised. Cohen and Lazarus (1973) contest the role of denial and feel this to be an acceptable coping mechanism.

Leading on from such theories has been the search for the ingredients in preparation which would be effective. Johnson (1973,74 & 75) has pointed out that preparation for sensations was more effective than preparations for procedure.

7. MODELING - Melamed (1977) has applied the notion that modeling a behaviour can allow for increased coping. Beneficial effects were found in studieswere subjects were allowed to observe the implications of a situation by monitoring their effects on others. Again it is unclear whether this form of input is simply an extension of "preparation" where the information is of a specific form. It also may allow for control or anxiety reduction by noting that another individual can undergo a situation without extreme reactions.

4.1.3 PAIN MANAGEMENT IN LABOUR

From this summary it can be seen that besides pharmacological strategies, pain can be affected and accounted for by psychological explanations. It is thus surprising that the area of labour pain is approached mainly from the pharmacological point of view. Clayton

(1980) instructs doctors that there are only "three methods in common use during the first stage of labour". All these relate to pharmacological means.

There are a number of procedures which women may be faced with. The evaluation of them has been slow. The multifactoral nature of the area should not be an obstacle to greater understanding, but should point to a more holistic approach to labour evaluation. The experience is a cumulation of events but from the women's point of view it is a complete experience and as such may be amenable to evaluation.

4.1.4 STUDY AIMS

This next study was set up to look at pain management and communication in labour by monitoring i) pain experience, mood and satisfaction in women receiving epidurals, pethidine and entonox or no drugs during labour; ii) the role of information, knowledge and medical procedures in such experience. Issues of anxiety and communiction may be highlighted in order to provided a psychological explanation of the pain experience as an account of rather than instead of the pharmacological management of labour. Such data may then provide an insight into psychological explanations of pain as they apply to labour and how the link in with communications and mood.

4.2 METHOD

4.2.1 SUBJECTS

A consecutive group of 80 mothers having babies in a London teaching hospital were invited to participate in the study. All mothers giving birth over the research period were included unless they were:-

i) Non-fluent English speakers as they would be unable to complete the questionnaires.

ii) Women having Caesarian sections as they would not experience labour and pain management for labour pains.

iii) Women having multiple births as this would be atypical.

One woman was not approached on the request of medical staff because of adverse medical factors associated with her baby. One woman failed to complete the interview and was classified as a refusal giving rise to a sample size of 78 women (mean age of 27.6 years) under the care of 4 consultant obstetricians. 42 were having their first baby (ten women within that group had a history of 1 previous abortion either spontaneous or induced, and one woman had 7 previous abortions). 36 were having a second or third baby, 13 of whom had experienced previous loss.

Three forms of pain management were used as a matter of ward policy. These included epidural anasthesia administered by an anaethetist

(n=28), pethidine administered by the midwife in doses of 150mg or 200 mg (n=30) or short periods of entonox inhalation (n=20).

Table 4.1 below sets out the age and parity factors according to pain management groups.

TABLE 4.1 SUBJECT DATA.

MEASURES	EPIDURAL n=28	PETHIDINE n=30	NO DRUGS n=20	S.S	M.S	F	P
AGE(s.d.)	27.8 (4.0)	28.0 (5.2)	26.6 (5.3)	27	14	.6	N.S.
PARITY	1.36 (.8)	1.93 (.3)	2.05 (1.1)	7.1	3.6	4.2	.01

There were no significant differences in age. Women having epidurals had lower parity than those in the no drugs group.

4.2.2 PROCEDURE

All women were approached between 24 and 48 hours after their delivery. They were asked to participate in the study and were assured of anonymity and confidentiality. The all completed an attitude questionnaire. Half of the women, selected at random within each analgesic group, were asked to complete the McGill Pain questionnaire and the Lorr McNair Profile of moods Scale to describe pain during their labour and the other half completed the questionnaires to describe their current state. Routine data from the clinical records was gathered for all women. Four weeks after discharge, all women were sent a postal questionnaire constructed to

evaluate attitudes to care and looking at repeated measures of communication aspects rated on a 7 point scale. They were supplied with postage paid envelopes. Subjects were kept annonymous as data was linked by study numbers.

QUESTIONNAIRES

A full set of questionnaires in order of administration can be found in appendix 4.1.

i) MCGILL PAIN QUESTIONNAIRE (Melzack and Torgerson, 1974).

Subjects described pain ratings by selecting descriptors from groups of scaled pain words. This questionnaire contains a large number of pain descriptors which have been divided into groups which purport to show ranked pain along a given axis. The subject chooses any words which describe their pain in the group. If no word applies to them they go on to the next group. From this questionnaire two indices emerge. Number of Pain Words (NPW) relates to the number of descriptors chosen. The Ranked Pain Index (RPI) gives a measure of the intensity of the words chosen.

In a second portion of the questionnaire subjects are presented with a series of pain questions to be ranked on an interval pain scale. This gives rise to the Present Pain Index (PPI).

ii) PROFILE OF MOOD SCALES (POMS) Lorr et. al. 1967).

In this questionnaire subjects are shown a series of adjectives which describe particular moods. They are asked to rank the degree

to which they experience this mood on a four point scale. The list comprises 60 adjectives. These purport to load on eight mood scales: Composure, Anger, Depression, Energy, Fatigue, Cheerfulness, Thoughtfulness, Tension-Anxiety.

iii) ATTITUDE QUESTIONNAIRE.

This questionnaire looked at aspects of satisfaction rated on a 7 point scale. They were asked about their satisfaction with their care, pain management and analgesic effects. They rated expectations and information about labour pains and analgesia. Lastly they were asked what analgesia they would choose for a future labour.

iv) CLINICAL MEASURES

After the interview routine information including age, parity, length of the 3 stages of labour, analgesia, baby Apgar scores (1 and 5 minutes) baby birthweight and who accompanied the woman in labour was recorded from case notes.

v) POST QUESTIONNAIRE

Four weeks after discharge women were posted a questionnaire constructed to evaluate care, satisfaction and communication on 7 point scales.

4.2.3 TASK

All women were approached between 12 and 24 hours after delivery and asked to participate in a study looking at their experiences of childbirth. They were assured of anonymity and confidentiality. After consent they completed the questionnaire pack with the researcher in the order given above. Staff were specifically asked not to interrupt during the interviews.

After the interviews data from file notes was gathered. Postal questionnaires were posted 4 weeks after discharge. All questionnaires were scored at the end of the study.

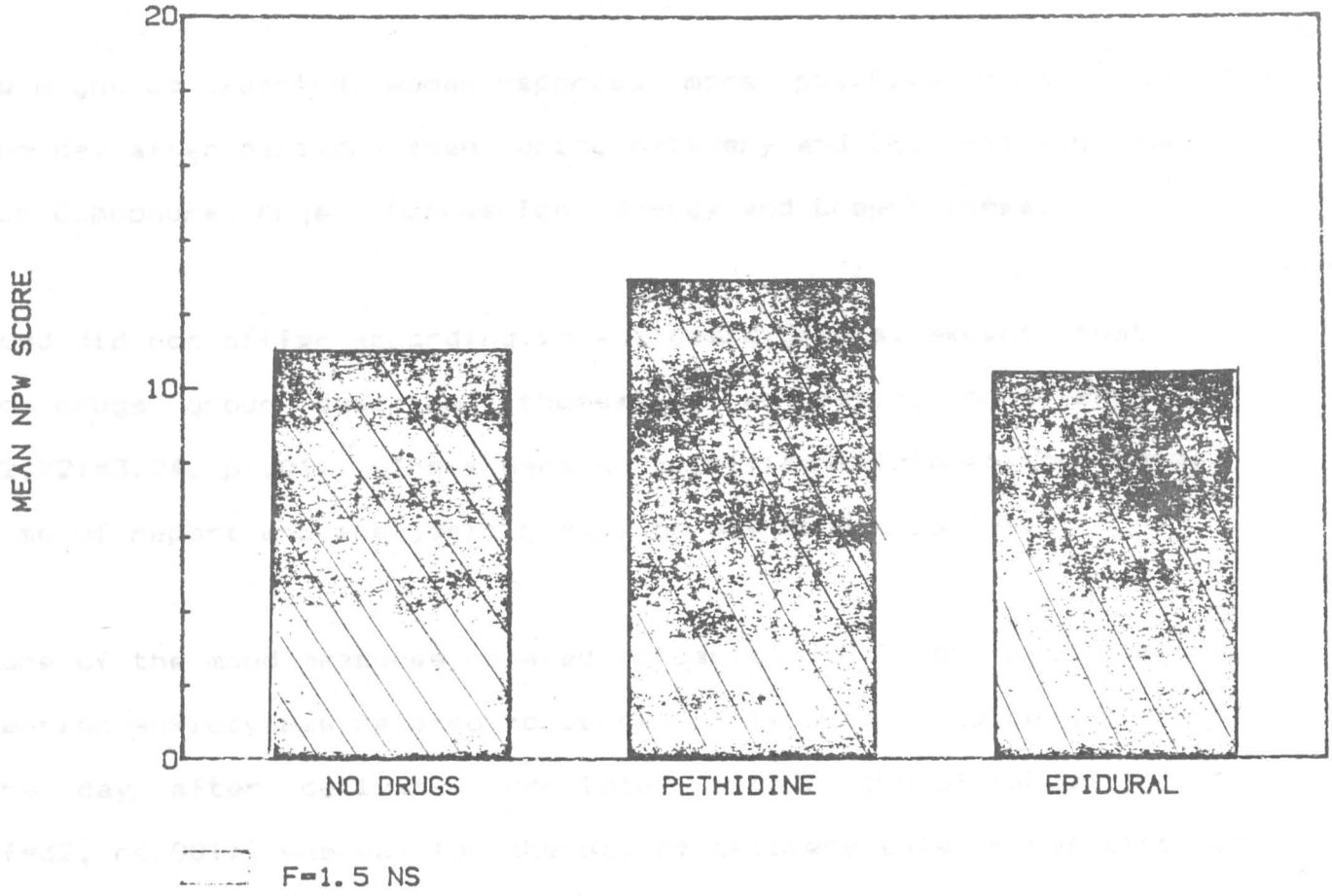
4.3 RESULTS

4.3.1 PAIN

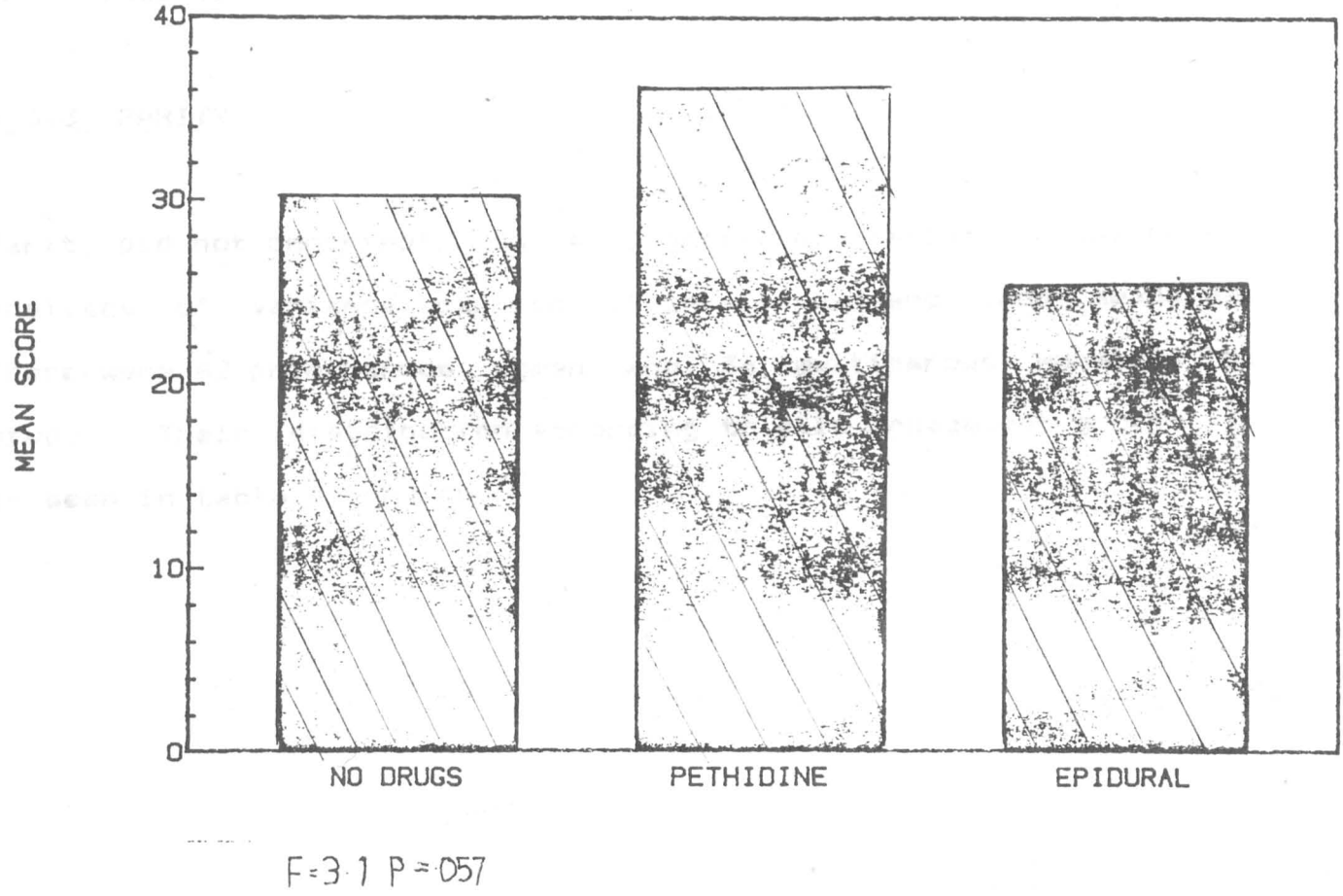
There were no significant differences between the analgesic groups in pain experiences on any of the three pain measures (number of pain words, $f(2,72) = 1$ n.s.; RPI, $F(2,72)=2.06$ n.s.; PPI, $F(2,72)=.30$ n.s.)

Patients reported more pain during labour than on the day after delivery (NPW $F(1,72)=22.04$ $p<.001$; RPI $F(1,72)=35.25$ $p<.001$; PPI, $F(1,72) =34.5$ $p<.001$). There were no significant interactions between the time of report and analgesic group on any of the pain measures. Pain scores were not related to parity or duration of labour. Figure 4.2 sets out pain levels for women on the McGill Scores.

NUMBER OF PAIN WORDS



PAIN WORDS (INTENSITY) FOR LABOUR



4.3.2. MOOD

As might be expected, women reported more positive mood states on the day after delivery than during delivery and this was significant for Composure, Anger, Depression, Energy and Cheerfulness.

Mood did not differ according to analgesic groups, except that the no drugs group described themselves as having most Energy ($F(2,72)=3.24$, $p<.01$). There were no significant interactions between time of report and analgesic groups on any mood measures.

None of the mood measures related to parity. Only one mood measure, Tension-anxiety was related to length of labour. Tension-Anxiety on the day after delivery correlated with length of labour ($r=.55$, $df=32$, $p<.001$), whereas for the day of delivery this correlation was not significant ($r=.06$, $df=45$, ns.) It may be that long labours resulted in higher tension/anxiety or conversely that raised anxiety levels played a part in labour duration. Correlation data cannot infer causation.

4.3.3 PARITY

Parity did not contribute as a significant factor in any of the analyses of variance carried out on all pain and mood measures. There were 42 primiparous women and 36 multiparous women in the study. Their distribution according to pain management groups can be seen in table 4.3 below.

TABLE 4.3 PARITY ACCORDING TO PAIN MANAGEMENT GROUPS

PARITY	% WOMEN IN GROUPS		
	NO DRUGS	PETHIDINE	EPIDURAL
	N=20	N=30	N=28
PRIMIPAROUS	40%	40%	78.6%
MULTIPAROUS	60%	60%	21.4%

There were more primiparous women in the Epidural group. (chi square=11.5 p=.07) Both first and second stage of labour were significantly longer for women in the Epidural group compared to the other groups, despite parity. Obviously cause and effect cannot be addressed where non-random selection of analgesia choice is in operation. Contrary to popular belief multiparous women were not significantly more likely to choose an analgesia free labour.

4.3.4. SATISFACTION WITH ANALGESIA

Women were divided into those who were satisfied and scored maximum satisfaction (7) and those who were less satisfied on each measure. Chi square comparisons are shown in table 4.4 below. There were no significant differences between the groups on overall satisfaction. However, the groups differed significantly in satisfaction with analgesia received. The no drugs group was most satisfied with what they had, whereas the Pethidine group was least satisfied and only

13.3% were very satisfied with its analgesic effect.

TABLE 4.4 SATISFACTION WITH ANALGESIA AND OVERALL SATISFACTION IN THREE ANALGESIA GROUPS.

QUESTION	% SATISFIED WITHIN GROUP			X2	P
	NONE	PETH	EPIDURAL		
1. HOW SATISFIED WERE YOU WITH PAIN MANAGEMENT YOU HAD(PETH,EPI,NO DRUGS)	73.7%	20.0%	60.7%	16.3	.001
2. HOW HAPPY WERE YOU THAT YOU UNDERSTOOD WHY YOU WERE HAVING (NO DRUGS,PETH,EPI)	63.2	50.0	78.6	5.1	.08
3. HOW ACCURATE WERE YOUR EXPECTATIONS OF THE EFFECT OF A LABOUR WITH (PETH,EPI NO DRUGS)	52.9	16.7	21.4	7.9	.02
4. HOW SATISFACTORY WAS THE EFFECT OF (PETH,EPI,NO DRUGS) ON YOU?	55.6	13.3	53.6	12.9	.01
OVERALL SATISFACTION	80	70	71.4	.67	NS

Fewer pethidine subjects understood why they had the analgesic and very few had an accurate expectation of the effect of Pethidine. Slightly more subjects had accurate expectations of the effect of Epidurals, though this was still fairly low. Nearly half the No Drug group had accurate expectations of a labour without drugs.

Table 4.5 shows the percentage of women who would choose the same or other analgesia on a future occasion. Significantly fewer of the Pethidine group would like the same analgesia again, compared with patients in the other two groups (chi 2=8.61, df=2 p<.03).

TABLE 4.5 WHAT WOULD YOU HAVE NEXT TIME?

GROUP	% THE SAME	% OTHER DRUG	% DIFFERENT
Pethidine	47	33	20
Epidural	84	0	16
None	68	0	32

X2 = 18.9 df=4, p=.0008

Far fewer women from the group who received pethidine wanted the same analgesic again on a subsequent labour.

4.3.5 BIRTH EXPERIENCE

The mean length of first stage labour for the total sample was 423.8 minutes. Second stage - the delivery of the baby - took a mean of 44.3 minutes and third stage - the delivery of the placenta, lasted on average 6.7 minutes. APGAR scales (1-10) were used to assess the condition of the baby at birth and five minutes after birth. The mean 1 minute APGAR score was 7.6 and the second APGAR reading averaged 9.5. Women were asked to evaluate the birth experience on on a 7 point scale - see table 4.5.

TABLE 4.6 EVALUATION OF THE EXPERIENCE OF BIRTH

GROUP	% SCORING AT	
	<7	7
NO DRUGS	55%	45%
PETHIDINE	70%	30%
EPIDURAL	68%	32%

X2= 1.3 p=.5 ns

On the whole the birth experience was not significantly altered by the administration of a drug. A large percentage of women rated the experience highly. It may be that drug administration matched need and hence did not affect evaluation, or it may be that there are other factors such as the arrival of a healthy baby which supercede the importance of the drugs.

4.3.6. INFORMATION

Table 4.7 shows the percentage of women in each group receiving information from various sources. Pethidine and Epidural groups were more likely to receive information from hospital classes and health service sources than those who received No Drugs. On the other hand, the no drug group did not go uninformed. They were as likely as other groups to get information from other sources, including private ante-natal classes (such as the NCT, Leboyer etc.)

books, friends or family. If information does play a part in pain management selection it seems that the source of information is of greater importance than absolute information level. The Epidural group were less likely to obtain information from experience, reflecting the lower parity of this group.

TABLE 4.7 PERCENTAGE OF PATIENTS IN 3 ANALGESIA GROUPS RECEIVING INFORMATION FROM VARIOUS SOURCES

INFORMATION SOURCE	% IN EACH GROUP			X2	P
	NO DRUGS	PETH	EPIDURAL		
HOSPITAL ANTE-NATAL CLASS	23.5%	69.6%	68.0%	10.48	.01
OTHER HEALTH SERVICE SOURCE	5.9%	26.1%	52.0%	10.47	.01
OTHER SOURCES	70.6%	82.6%	88.0%	2.07	NS
EXPERIENCE	52.9%	52.2%	20.0%	6.77	.05

4.3.7. LABOUR EXPERIENCE

The experience of labour can be evaluated in terms of medical parameters such as the time of labour and the condition of the baby at birth, social parameters such as who was present with the mother during labour, and psychological parameters including satisfaction and mood. Some information about labour experience is presented in table 4.8. Women having No Drugs were more likely than the other groups not to have the father present during labour. Epidural women had longer early stages of labour and more forceps deliveries than

women in the other groups.

TABLE 4.8 DATA AND LABOUR EXPERIENCE IN THE 3 ANALGESIA GROUPS

MEASURES	GROUP			P
	NONE	PETH	EPI	
	n=20	n=30	n=28	
STAGE 1 TIME (MINS)*	291.0	383.3	578.3	.0001
STAGE 2 TIME (MINS)*	21.3	30.2	76.7	.0001
STAGE 3 TIME (MINS)*	7.8	8.2	5.3	NS
BABY APGAR 1 MINUTE *	7.8	7.9	7.2	NS
BABY APGAR 2 MINUTES*	9.5	9.4	9.6	NS
BABY WEIGHT (KG) *	3.3	3.4	3.3	NS
FORCEPS DELIVERY (%)~	5.0	6.7	64.3	.01
FATHER PRESENT (%)~	44.4	75.9	84.6	.01

* = ANALYSIS OF VARIANCE - parametric data

~ = CHI SQUARE TEST - non parametric data

4.3.8 PERSONAL THOUGHTS, FEELINGS AND CONCERNS.

Subjects rated the extent to which personal thoughts, feelings and concerns were of importance to them and subsequently the extent to which the staff carried such endeavours through. Figures 5.8 (i-iii) sets out ratings for the importance women placed on an aspect of care and the extent to which they received input on this dimension. The three dimensions measured included i) Staff asking about their personal thoughts feelings and concerns; ii) staff understanding their personal thoughts feelings and concerns and iii) staff taking them into account when planning care.

Significantly less of the group receiving epidurals thought it was an important issue that staff should actively try and find out their personal thoughts feelings and concerns. Those receiving no drugs were more likely to think the staff had actually done so. There were no differences across groups when rating the importance of staff sympathetically approaching these issues and there were no significant differences between the groups when rating actual staff understanding on this point. The pethidine group felt that these issues ought to be taken into account significantly higher than the other groups.

The mean scores on all three aspects of thoughts, feelings and concerns were high showing that women regard it as an important aspect of care. There were no differences between perceived importance and actual treatment for staff i) asking (no drugs t=.94

p=.4 ns; pethidine t=.5 p=.7 ns; epidural t=.3 p=.8 ns), nor for ii) understanding (no drugs t=.4 p=.7 ns; pethidine t=.1 p=.9 ns; epidural t=1, p=.9 ns). Yet when it came to iii) action i.e. the extent to which thoughts feelings and concerns were taken into account for planning labour, women in the pethidine and epidural groups found actual care significantly lower than the importance they placed on this (no drugs t=1 p=.3 ns; pethidine t=3.7 p=.001; epidural t=2.2 p=.03). It thus seems that communication cannot be a token gesture but needs to be incorporated into action. It is an active process where staff need to know and understand women's feelings thoughts and concerns, and also to take them into account when planning treatment for women. Table 4. 9 below presents the data.

TABLE 4.9 REPEATED MEASURES T-TEST COMPARING PERCEIVED IMPORTANCE OF CARE AND LEVELS RECEIVED.

VARIABLE	MEAN VALUE		T	P
	NB	ACTUAL		
1. FIND OUT THOUGHTS	5.8	5.7	0.8	.4
FEELINGS AND CONCERS	(1.6)	(1.6)	(df=76)	
2. SYMPATHETICALLY	6.2	6.1	0.2	.8
UNDERSTAND	(1.3)	(1.2)	(df=76)	
3. TAKE INTO ACCOUNT	6.1	5.6	3.6	.001
	(1.3)	(1.6)	(df=77)	

(standard deviation in brackets.)

It appears that it is not simply the motivation for communication

and the availability of it, but the extent to which it is heeded which is important.

4.3.9 KNOWLEDGE

Women were asked to note pain management methods available for labour. Table 4.10. below sets out the methods noted by each group.

TABLE 4.10 MANAGEMENT METHODS FOR LABOUR PAINS

METHOD	% NOTING IT IN:		
	NO DRUGS	PETHIDINE	EPIDURAL
PETHIDINE	63%	-	93%
EPIDURAL	84%	97%	-
ENTONOX	57%	63%	82%
RELAXATION	-	17%	25%

Very few women from the pethidine and epidural groups acknowledge the role of relaxation in labour pain management. Most of the drug groups knew about the alternative drugs.

The groups did not differ when rating how much the hospital staff tried to explain things to them during labour and delivery - the mean level was high (5.98 on a 7 point scale). However there do seem to be differences in the clarity of such explanations. See table 4.11 below

TABLE 4.11 INFORMATION AND EXPLANATIONS - COMPARISONS OF THREE GROUPS

VARIABLE	MEAN SCORES			X2	SIG
	NO DRUGS N=20	PETH N=30	EPI N=28		
Explain	5.8	5.7	6.1	0.2	ns
Clarity (% 7)	65%	53%	54%	18.1	*
% Attending A-N Class	23.5%	69.6%	68%	10.5 (df=2)	**
% Using hospital info sources	6%	26%	52%	10.4 (df=2)	**
% Using other sources	71%	83%	88%	2.1 (df=2)	ns
No having forceps	1	2	18	**	

* p <.05 ** p<.01

4.3.10 COMMUNICATIONS

Communications were rated immediately after labour and again at four weeks follow up on a 7 point scale. Immediately after labour the mean rating was 5.95 (SD 1.5). 51.3% subjects rated this at maximum. In addition women were asked on follow up to rate communications for ante-natal care, labour/delivery and post partum. Figure 4.12 shows the change of communication rating over time. Initial rating was high with a significant deterioration over time (t=5.4 df=35 p=.0001). This could not be accounted for by

the possibility that only disgruntled women replied, as there were no significant differences in communication rating between the group who replied on follow up and those who did not (mean score follow up =6.0 no reply 5.8 t=0.7 DF= 76 p=.5 ns). Nor were those who replied generally happier with the care they received (mean reply =6.4 mean non reply =6.7 t=1.2 df =76 p=.2 ns).

Table 4.13 below sets out correlations between communication variables and pain and mood for labour.

TABLE 4.13 CORRELATIONS BETWEEN SATISFACTION WITH COMMUNICATION AND REPORTED PAIN AND MOOD IN LABOUR

VARIABLE	COMM. LABOUR N=46	WAY SPK LABOUR N=21	WAY SPK POST N=21	O/ALL COMM COMM N=21	COMM A/N N=21
NPW	.0	.2	.3 +	-.1	.1
PW	-.4 **	.0	.1	.2	.3
INTENSE 1	-.3 *	.3 +	.2	-.1	.1
INTENSE 2	-.4 **	.1	.1	.2	.3 +
INTENSE 3	-.1	-.1	-.2	.0	-.1
COMPOSURE	-.4 **	.1	.2	-.1	-.2
ANGER	-.3 *	.4 *	.4 *	.1	.1
DEPRESSION	.1	-.1	-.4 *	-.2	.1
ENERGY	-.2 +	-.1	.0	.2	.3
FATIGUE	.2 +	-.3	-.4 *	-.0	-.0
CHEERFULNESS	.2	-.2	-.2	-.2	.3+
THOUGHTFULLNESS	.1	.4 *	.4 *	.1	.3
TENSION ANXIETY	.1	.4 *	.4 *	.1	

+ P<.10; * P<.05; ** P<.01

Women with higher communications score also reported lower pain words, lower intensity of labour pain, and lower intensity of pain at its worst during labour. In terms of mood women with higher satisfaction with communication had significantly lower composure and anger scores and there was a trend for them to report lower energy and greater fatigue. It is unclear whether it is simply that those with lower pain experience were more satisfied with communications because of lower pain experience, or whether increased communications served to reduce pain.

TABLE 4.14 CORRELATIONS BETWEEN SATISFACTION,PAIN AND MOOD POST/P

VARIABLE	COMM	WAY SPK LABOUR	WAY SPK POST	OVERALL COMM	COMM A/N
NPW	-.1	.1	.2	-.1	-.4
PW	.1	.2	.1	.4 *	.3
INTENS1	-.0	.2	.1	.2	-.3
INTENS2	-.1	-.2	-.2	.1	.2
INTENS3	.3 *	.4 +	.0	.5 *	.1
COMPOSURE	.0	.4 +	-.1	.2	.0
ANGER	.2	.5 *	.0	.4 +	.1
DEPRESSION	.2	.0	-.2	.2	.4 +
ENERGY	.2 +	.5 *	.2	.3	-.5 *
FATIGUE	.4 *	.3	-.0	.6 *	.5 *
CHEERFULNESS	.1	.1	-.4 *	.1	.4 +
THOUGHTFULNESS	.2 +	.1	-.2	.1	-.1
TENSION/ANXIETY	.2 +	.1	-.2	.1	

+ P<.10 * P<.05

were more satisfied were also more fatigued. It may be that a tired women is more passive and needy and this encourages interaction. A women who is up and about may not need staff attention or may conflict with the caring role of staff. On overall communication at follow-up, satisfaction correlated with increased intensity of pain.

4.3.11 RESPONSIVENESS OF STAFF TO MEDICALISATION

Women were asked to rate how responsive they thought staff were during labour and delivery to their personal feelings thoughts and concerns about 12 procedures. Table 4.15 below compares this across groups for those rating at seven and those rating below.

TABLE 4.15 RATING OF STAFF RESPONSIVENESS TO PROCEDURE

PROCEDURE		% RATING AT 7 (MAX)			X2
		NO	PETH	EPI	
SHAVE	N=72	72.2%	55.6%	31.7%	2.6 (2) ns
ENEMA	N=64	64.7%	50.0%	42.9%	1.8 (2) NS
INDUCTION	N=23	100 %	45.5%	55.6%	2.9 (2) NS
MONITORS	N=73	66.7%	46.7%	57.1%	1.7 (2) NS
DRIPS	N=64	62.5%	25.0%	64.3%	9.6 (2) **
CONTRACTIONS	N=78	55.0%	36.7%	60.7%	3.6 (2) NS
RELAXATION	N=77	50.0%	31.0%	57.1%	4.1 (2) NS
EPISIOTOMY	N=53	69.2%	35.3%	43.5%	3.6 (2) NS
FORCEPS	N=21	100 %	100 %	66.7%	1.4 (2) NS
SUTURES	N=69	85.7%	42.9%	44.4%	7.9 (2) **

** p<.01 (DF in brackets)

Of high note is the number of procedures carried out. Most women were shaved and were monitored mechanically during labour. A high proportion had drips during the labour and 53 women had an episiotomy. 69 reported having sutures. The discrepancy between the reported episiotomy and suture figure can be accounted for by women who tore naturally and needed stitching and those who were unaware they had an episiotomy but were obviously aware of the stitches. The Pethidine group report the staff significantly less responsivefor seven out of the ten procedures, and this reaches significance in relation to drips and sutures.

4.3.12 ANXIETY

Anxiety was measured as a subscale of the Lorr MacNair inventory for labour and post partum. Correlations between anxiety, pain, labour variables and communication are presented in table 4.16 below.

TABLE 4.16 CORRELATIONS WITH ANXIETY

CORRELATE OF ANXIETY	DURING LABOUR	POST PARTUM
PREVIOUS OBSTETRIC HISTORY	-.09	-.03
1ST STAGE TIME	.12	-.06
SECOND STAGE TIME	.14	.2
3RD STAGE TIME	.07	-.2
BABY APGAR (1 MINUTE)	.13	-.3 *
BABY APGAR (5 MINUTES)	-.2 +	-.1

BABY WEIGHT	-.04	-.2
NUMBER OF PAIN WORDS	.51 ***	.04
PAIN WORDS	.47 **	.02
INTENSE 1	.26 *	.09
INTENSE 2	.41 **	.02
INTENSE 3	.32 **	.2
POST PARTUM COMMUICATION	-.1	.3 *
FOLLOW UP COMMUNICATION	.07	.05

* p>.05

Labour anxiety correlated with pain on all measures. There was also a trend for anxiety to be related to a poor APGAR score at five minutes. This would denote an ill baby. Post partum anxiety was not significantly related to any labour pain or duration measures. Anxiety at this time was related, once again, to the health of the baby (APGAR) and to communications.

4.3.13 FOLLOW UP RESPONSE.

Subjects were followed up4 weeks after discharge. 36 subjects returned their postal questionnaire. Subjects did not differ markedly from thse who did not return. Comparisons can be seen in appendix 4.2).

4.3.14 SATISFACTION OVER TIME

Repeated measures were taken to evaluate satisfaction and communications immediately after delivery and at follow up. Table 4.17 below sets out the findings.

TABLE 4.17 COMPARISONS BETWEEN POST LABOUR AND FOLLOW UP RESPONSES.

REPEATED MEASURES T-TEST

VARIABLE	N	MEAN SCORE P/PART	MEAN SCORE F/UP	T	P
Way spoken to in labour	36	6.1	5.6	2.3	.03
Care	36	6.7	5.7	5.4	.0001
Experience of having a baby	36	5.0	5.8	2.5	.02
Communications	36	6.1	4.9	5.4	.0001
Satisfaction effect pain management	30	4.9	4.7	0.59	.56 ns

Subjects rate communications and care significantly less favourably at follow up (Care t=5.4 p=.0001; Communications during labour t=2.3 p=.03; Communications generally t=5.4 p=.0001). The birth experience is rated more positively with time and pain management rating is unchanged. Subjects look back more critically at aspects of communication. This finding cannot be accounted for by simple passage of time as there is no change on rating of pain management and indeed there is an increased evaluation of the experience of having a baby. It may be that it is difficult for a subject to express criticism of hospital staff while still in hospital. Cognitive dissonance theory would claim that subjects would need to keep evaluation consonant with the action. Once discharged from hospital it may be easier for subjects to view their experience more critically. Ley (1988) found a curvilinear relationship between time elapsing since discharge and reported satisfaction.

4.3.15 GROUP DIFFERENCES ACCORDING TO PAIN MANAGEMENT

Follow up data was analysed according to pain management group. Table 4.18 below sets out findings.

TABLE 4.18 ANALYSIS OF VARIANCE - COMPARISONS BETWEEN THREE PAIN MANAGEMENT GROUPS AND FOLLOW UP RATINGS.

	MEAN SCORES					
VARIABLE	NO DRG	PETH	EPI	S.S	M.S	F
A VISIT	4.3	4.6	4.9	0.8	0.4	0.2
A COMM	4.0	4.0	5.1	6.3	3.2	2.5 +
A PROG INFO	4.7	3.9	5.3	9.1	4.5	3.4 *
A HAVBYC	3.0	3.6	4.7	8.9	4.5	2.1
HAVEBYCS	5.7	6.0	6.2	0.7	0.3	0.2
AMNTPAIN	4.5	3.5	3.8	3.2	1.6	0.7
SUCCESS PK	5.8	4.5	5.4	6.7	3.3	1.1
CHOICE	5.8	4.6	5.3	4.2	2.1	0.8
FIRST HOUR	4.3	5.0	5.9	6.1	3.1	1.7
FEEDING	4.7	3.9	5.2	6.2	3.0	2.2
HELP FEEDING	4.6	4.0	5.3	7.9	3.9	1.5
DRVISIT	4.3	3.9	5.4	12.8	6.4	2.8 +
RULES	4.4	4.8	5.8	10.4	5.2	4.5 *
VISITING	3.9	5.1	4.7	10.1	5.1	2.2
PWARDCR	4.8	5.9	6.3	6.1	3.0	1.9
BABWRDCARE	5.7	5.3	6.3	7.6	3.8	1.9
PHOWSPEAK	5.3	5.2	5.7	1.5	0.8	0.4
PINFODO	5.1	4.5	5.9	8.5	4.3	1.7
PINFOPROG	5.4	4.7	5.8	8.3	4.2	1.6

PINFBAB	5.3	4.9	5.7	3.6	1.8	0.7
FOOD	3.1	2.8	2.6	1.5	0.8	0.4
PROVISIONS	5.3	4.8	5.0	1.2	0.6	0.2
HOMEADV	3.7	3.4	4.2	3.8	1.9	0.6
OVERALL CARE	5.1	5.2	6.2	6.9	3.4	1.9
EXPER HAV BBY	6.1	5.3	6.0	4.3	2.2	1.3
OVERALL COMM	3.4	4.4	5.7	21.3	10.7	5.5 **
NO. OF SUG	2.6	3.0	2.7	0.8	0.4	0.2

+ p>.10 (trend) * P>.05 ** p<.01

On the majority of variables analgesic group was not a significant factor at follow up. The significant findings should be viewed with caution given the large number of analyses carried out. Women receiving no drugs were less satisfied with communications than those receiving epidurals ($f=5.5$ $df=2,28$ $p<.01$), doctors visits ($f=3.1$ $2,32$ $p=.05$) and rules ($f=4.3$ $2,32$ $p<.02$). There was a tendency for those receiving Epidurals to rate ante-natal communications higher and Pethidine women to rate progress information significantly lower. In all three cases, the Epidural group was most satisfied. It may be that this group are more compliant, and are thus easier to please. They may have more medical difficulties associated with the epidural procedure and thus warrant extra medical intervention or attention, or they may be more accepting of the medicalisation of childbirth and thus not in conflict with the medical environment.

4.4 DISCUSSION

4.4.1 ANALGESIA GROUPS

The pethidine group seemed consistently less satisfied than those receiving epidural analgesia or those with no drugs except for short periods of entonox inhalation.

The dissatisfaction in the Pethidine patients may result from problems arising in the communication process. While both the Pethidine and Epidural groups describe their expectations of analgesia as inaccurate, the Pethidine group tend to be less satisfied with their understanding of the analgesic prescription. Women having Pethidine (like those having Epidural) were likely to have attended hospital and ante-natal classes or received their information from health service sources. Thus any communication problems are not due to failure of the women to attend such classes and may be due to the content of the information given. Although we have no record of the information imparted at the classes one can look at the standard issue booklets provided by the hospital and analyse the information on analgesia. The information on Pethidine spans only a paragraph (that on Epidural is almost a page). A Flesch Formula carried out on the explanation of both these analgesics show that whereas 74% of the population would be able to understand the information written on Epidurals, this figure falls to 24% for Pethidine. This fact, reflected in the written information, may have been carried through on the verbal exchanges

as it may reflect the health service or hospital attitude as a whole.

The second possibility relating directly to communication is the physiological effect of the Pethidine itself. The drug sends the women to sleep and blunts their memory of events considerably. At quite important times the women are drowsy and few can recall events with clarity. This physiological effect on the mental state of the woman may actively hinder communications and any beneficial effects of communications may simply disappear. Much information exists regarding procedures during labour, but nothing exists, on the effects of the analgesics in terms of sensations. Johnson (1973) has found that failure to cope may be associated with inaccurate expectations about sensations as opposed to procedures. It may be that these patients are ill equipped for expectations regarding the sensations invoked by Pethidine, despite knowledge of procedure.

4.4.2 SATISFACTION

Expectations of care varied. It may be that satisfaction is not an absolute level but is a construct which is directly linked to expectations. In order to be satisfied a patient should receive at least their expected level of care. Anything better than their expectation will be a bonus, but anything less than their expectations would result in dissatisfaction. This may be true for the Pethidine patients more so than the other patients. Although the question directly related to the type of analgesia was not addressed, many Epidural patients stated the effect was better than they expected whereas this comment was not similarly rated for the Pethidine patients.

Subjects were asked to rate aspects of care together with an estimation of how important such an aspect of care was for them. They varied on these ratings (the importance to them of the staff asking about their personal thoughts, feelings and concerns and the importance of understanding these.) The main differences emerge in the rating of the importance of these factors for planning of their labour.

4.4.3 ANTE-NATAL CLASSES

Women having no drugs were less likely to have attended hospital run ante-natal classes. However, they were not people who avoided information. A large proportion did seek information but chose their sources as non-health service avenues. The no drugs group were also less likely to have the baby's father present during labour. Both factors may influence the decisions about analgesia. Women attending classes may be more aware of the availability of drug analgesia and therefore more able to request it. Women attending non-health service sources may be more objective in their information gathering regarding analgesia. Women attending health service sources for information may be moe likely to be given biased advice on the analgesics which may affect the extent to which their choice of analgesia can be truly 'informed'. When one examines analgesics women knew about one sees that women having no drugs knew about the existence of Pethidine or Epidural analgesia for labour pains, whereas women having these analgesics were less likely to record knowing about the use of relaxation techniques in labour management.

Women could not be randomly allocated to information groups, and thus it may be that those who wanted a particular pain management regime self-selected information source. However, there may be a large group of women who are undecided and the content of courses needs fuller understanding. Information seeking is in itself of interest. Most women in this study sought information of some kind.

4.4.4 PRESENCE OF FATHER DURING LABOUR

In the no drugs group, 44.4% of fathers were present, compared to 75.9% in the Pethidine group and 84.6% in the Epidural group ($p<.01$).

The presence of the father may affect choice of analgesia and progress of labour in a number of ways. He might facilitate the woman's request for drugs or he might intrude on the communication between midwife and patient, preventing a professional supportive relationship forming which might reduce the need for pharmacological support. The passive roles played by partners in the labour wards may also hinder the communication processs. They are present as a guest in the labour ward and are there at the mercy of the labour attendants. They may be requested to leave at any time and are unable to actively help in any way. This may result in a feeling of helplessness in the face of pain or discomfort of someone they care for and they might feel their duty as one of relieving the pain via the only channel open to them - a request to the staff for analgesia for their spouse. On the other hand staff may be predisposed to the use of analgesia (as seen from the ante-natal literature) and they may use the father to persuade the woman to accept pain relief. Indeed Chambers notes that "pain relief is best given before pain"

and thus persuasion is necessary to accept pain relief rather than a response to unendurable pain. Fishbein (1977) has noted the importance of important others in influencing attitudes which change behavioural intentions.

4.4.5 DISSATISFACTION WITH PETHIDINE

This study has shown that dissatisfaction with Pethidine analgesia during labour which does not appear attributable to the resulting pain and distress experienced, but which, given the dissatisfaction with explanatons and reported inaccuracy of expectations, may be associated with failures in the psychological preparation of the patient.

4.4.6 COMMUNICATIONS

Satisfaction with communication decreases over time. At follow up women were significantly less satisfied with communication than on the post partum rating.

Communication can cover the existance of dialogue, informational need and then behaviour as a result of communication. Women were asked about their personal thoughts, feelings and concerns. They were also asked to rate how important these were during their care. Most women felt it important that staff ask about these, unerstand these and take them into account. When staff behaviour was rated there were no significant differences according to analgesic group between rated importance and levels received for i) asking and ii)understanding. However both the epidural and pethidine groups rated the level to which staff took these into account when planning

their labour as significantly lower than the perceived importance expressed by the women. There were no such differences in the no drugs group. It seems that communication cannot simply involve acknowledging the communication needs of women, but is a more interactive process of seeking out need and taking it into active account for health care planning.

Communication factors play a role in analgesia choice and outcome in terms of information source.

As has been found by other workers (Ley 1977) although there was an overall satisfaction with care (73% stated they were very satisfied with the care they received during labour) the figure falls to 51% when questioned about satisfaction with communications. Only 56% of the patients were satisfied that the staff had tried to explain things to them and there was not complete satisfaction with the clarity of such explanations even when they were forthcoming. 47% of the women were happy that they had a clear picture of what would happen to them during their labour, but the rest could certainly benefit from improved communications. Perhaps the most disturbing figure of all is that only 35% of the women felt that their experience was good, with a further 34% actually placing their experience on the bad side of the scale. The distribution of these scores did not significantly differ according to analgesic groups.

4.4.7 PAIN AND MOOD

Women did not report pain free labours. There were no significant differences between the groups on level of pain reported. It may be

that pain management is tailored to ensure no more than a certain level of pain or that pain reporting is very similar despite pain management. Pain after labour was significantly reduced, and the longer term presence of analgesia (especially in the case of epidural) did not differentiate 'after pains' for these women. Unlike other studies, multiparous women did not report lower pain levels than primiparous women.

Pain management did not affect mood states other than energy. Women with no analgesia were more energetic. Women who had longer labours rated tension-anxiety levels higher. The difference was not apparent after labour. It thus seems that a long labour can serve to raise anxiety.

Communications during labour did not correlate with the number of pain words chosen, but did correlate significantly with the pain intensity and the pain ratings. Commnication ratings for labour correlated significantly with the moods of anger and depression and there was a trend for energy and fatigue to relate as well. Communications at other times such as ante-natal ratings, overall ratings and post partum ratings did not affect the experience of pain. It may be that good communications reduce pain, or that women in less pain rate communications higher. These are specific to the labour period and thus seem to be directly related to staff caring for them at the time. The notion of global complainers or people who are always satisfied is not bourne out by these figures.

4.4.8 MEDICAL INTERVENTION

There were many medical procedures carried out. 72 women were

shaved, 64 received a suppository or enema and 23 were induced. During labour 73 were monitored continuously and a further 64 were connected to drips. For delivery 53 women were given an episiotomy and 21 had a forceps delivery.

4.4.9 ANXIETY

Anxiety levels during labour correlated significantly with pain measures and APGAR scores. This could serve to confirm Kumar & Robson's finding that anxiety is related to the well-being of the mother and the baby. Post partum anxiety was not related to labour pain, but was related to the condition of the baby (lower APGAR at birth higher anxiety) and communications.

4.4.10 FOLLOW UP

Satisfaction on follow up was significantly lower than immediately post partum despite the fact that pain management ratings did not alter over time. Women viewed the experience of having a baby more positively with the passage of time. It may be that it is easier to criticise care after discharge or it may be that with the passage of time women gather perspective or comparative data in order to view their care more critically.

4.5 CONCLUSIONS

The level of communications in labour and post partum care seems to be a complex issue which affects subsequent ratings of care. Communications are not simply confined to the way women are spoken to but also reflect the information, explanation and reassurance

content of the communication. Women receiving Pethidine were generally less satisfied than women receiving other forms of pain management. Satisfaction on follow up was significantly lower than satisfaction measured immediately after delivery.

Allocation to analgesia groups is not random due to obvious ethical reasons and thus explanations of differences must be limited. The passage of information is also not controlled and women may seek out different kinds and amounts of information. However, within these constraints it is still of interest to observe the impact of information on psychological and medical progress and to catalogue the effects of pain management procedures on a group of women.

SUMMARY

A group of 78 consecutive birthing mothers rated pain, mood, satisfaction and attitudes towards their experience immediately after delivery and at 4 weeks post partum. Women received Epidurals (E), Pethidine (P) or Entonox/No Drugs (N) during labour. There were no significant differences according to analgesic group on pain experience. However, dissatisfaction was noted for women receiving Pethidine. This was accounted for by lack of psychological preparation. Communication in terms of enquiry and sympathy met expectation, but the extent to which it was taken into account did not. Communication needs to be incorporated into action. There were significant correlations between higher communication rating and lower pain scores. Anxiety during labour correlated with pain scores and baby APGAR (an index of the well being of the baby). Post partum anxiety was unrelated to pain but significantly related to communications and baby health (APGAR). Communications and care were rated significantly lower at 4 week follow up. On the majority of variables analgesic group was not a significant factor at follow up. Women in group N were less satisfied with communications, doctor visits and rules. Those in the P group rated communications and progress information lower.

CHAPTER 5 - THE ROLE OF ANXIETY AND INFORMATION IN THE COURSE OF CHILDBIRTH

A group of primiparous women were studied before and after delivery to examine anxiety, information levels, sources and desires and cognitive coping. The relation these had to post-partum outcome in terms of anxiety, recovery, satisfaction and coping was examined.

5.1 INTRODUCTION

5.1.1 ANXIETY IN OBSTETRICS

Anxiety has been singled out as a negative emotion in pregnancy (Reed 1944). Studies have attempted to locate sources of stress and implications of stress levels. Nilson and Almgren (1970) correlated low education with higher psychological symptoms during pregnancy. Barclay and Barclay (1976) compared pregnant and non pregnant women looking at knowledge and attitude towards pregnancy and labour. They found increased knolwedge did not relate to reduced anxiety and there were no differences between the two groups on anxiety score. Astbury (1980) compared prepared and non prepared pregnant women and although he found the former significantly more knowledgable, there were no significant difference in anxiety.

Is anxiety a useful concept in pregnancy? Clinically anxiety relates to irrational fears or anxiety out of proportion to the stressors. High ante-natal anxiety has been correlated with previous obstetric abnormalities (Davids 1961, McDonald 1963, Crandon 1979) which does not appear to be irrational. Anxiety correlated with previous miscarriage often subsides in the last trimester when the pregnancy is obviously viable (Kumar and Robson 1978). Pitt (1968) and Breen (1973) found that moderate anxiety correlated with better post natal adjustment and ante-natal anxiety was unrelated to labour complications. These studies raise the

notion that anxiety may be both a predictor of future outcome and of interest. Theoretical models of anxiety may be of use.

Janis (1958) found a relationship between pre-operative state and post-operative coping in other fields, which is of distinct importance as such a relationship would allow for predictions of post-operative outcome based on pre-operative measures and would further open up an important field for preventive care. At present there is a great amount of pre-operative input without a clear understanding of the impact, if it works, how it works and why.

As mentioned earlier there has been a general failure to replicate Janis' curvilinear relationship and many subsequent workers have generated a linear rather than a curvilinear relationship. (Johnson, Leventhal and Dabbs, 1971, Sime 1973, Johnston 1979). Yet Auerbach (1973) found some evidence for a curvilinear relationship and Fenz & Epstein (1967) Speisman et. al.(1964) and Wolff et. al (1964) found pre-stress anxiety level predictive of post stress coping. Linear and quadratic relations provide conflicting predictions for the low anxiety group. Where other workers have found a better adaptation in this group, Janis found not only a poor prognosis on measures of coping but implied that pre-operative increasing of awareness which may heighten anxiety levels may be beneficial to this group. In a linear model it would be this exact group which would have a conflicting prognosis.

Janis' study raised methodological problems.Wtih retrospective recall subjects who fared well may not recall pre-operative anxiety

whereas those who fared badly may exaggerate pre-operative state. Prospective studies raise questions of the nature of the relationship rather than the existance of the relationship (Cohen and Lazarus 1973). Furthermore, although the other studies looked at pre and post-operative measures the role of information has been less systematically studied. Sime (1973) and Janis and Leventhal (1968) found amount of information was related to post-operative negative affect. The theory raises three major questions - The nature of the pre-operative state/post operative outcome relationship - Cognitive preparation and what it entails - - The role of information in this procedure needs expanding.

The many studies suffer from inconsistancy of measurements which are claimed to load on similar or related constructs. Anxiety itself is a term which is not readily defined. Janis (1958) uses the terms 'fear, anxiety and stress' interchangeably in his chapter. Anxiety has been measured in many ways including mood adjective check lists and pre-operative worry scales (e.g. Johnson et. al. 1971), pre operative fear scales (Sime 1976) self and observer ratings (Cohen and Lazarus 1973), Hospital Stress Rating Scale (Volicer 1978) and the State-Trait Anxiety Inventory (Spielberger et. al. 1970) (Johnston and Carpenter 1980) . Only the last workers questioned the validity of measures (Johnston and Hackman 1977). Given such inconsistency in measures it is unclear whether Janis' findings could be replicated if the same constructs were tapped and whether linear relationships may be obtained for some other emotional construct. Furthermore division into low medium and high anxiety groups has been rather arbitary. A "clinical" anxiety level, similar to "clinical depression" is not available.

The next construct which is used rather loosely is one of 'post-operative outcome'. This ranges in the studies. Coping and outcome are often used interchangeably. Indeed at times 'coping' itself becomes an outcome measure. Janis looked at a series of moods as did others (Johnston 1980). Measures include pain ratings (Cohen and Lazarus 1973, Egbert et. al. 1964, Johnson 1965.), analgesia use (Chapman 1969, Egbert 1964, Schmitt and Wooldridge 1973, Healey 1968, Andred 1970, Johnson 1972), distress, sleep, recall of details, blood pressure, pulse, to mention just some. Some systematic categorization for these measures would be helpful. The extent to which they reflect the outcome needs to be ascertained if it is to be a useful concept. Outcome has been treated as a unitary concept, when it could be viewed as a multidimensional concept .

Definitions of "high, Medium and Low" anxiety groups are not standard. It is unclear whether subjects in one study would be categorised in the same anxiety group in another study. No absolute limit has been defined to delineate an anxiety group. For example in Johnson (1971), Sime (1976) and Wallace (1984) the anxiety groups are generated by a simple three way division of the sample. These groups may not be comprable to those in other studies. Internal consistency within a group may also be open to question. Does the individual with the lowest anxiety score within a group differ markedly from that individual who lies just before the cut off point

for inclusion? Indeed, Janis' study (1958) showed the Moderate group to containe a higher proportion of the sample than the low or high groups (low N=35, Moderate N=67 High N=47). In the three studies mentioned earlier the subjects meet no other criteria than being lower in anxiety than two thirds of the patients in the particular group under consideration. Little comparison of normative data is incorporated. It is also unclear whether the low and high anxiety groups do constitute equal thirds of the general population, or whether they are smaller in number as in Janis' report. A simple three way division may result in overinclusion of "moderate" subjects in the "high and low" groups at either end. Such overinclusion may well contaminate the data and shield any effects if they are small.

According to Janis, some anxiety is beneficial. Thus any attempts to minimize anxiety may destroy such beneficial effect. Johnston (1980) notes that "any evidence that it may be physically or psychologically harmful to minimize the anxiety of a group of surgical patients has considerable practical bearing on the care of these patients". Johnston and Carpenter (1980) found some weak support for the linear model and no support for Janis' curvilinear model.

It thus seems that the nature of the relationship is not clear. There may be other issues relating to the exact nature of the emotions measured and the outcomes utilised which need greater clarity of definition in order to generalise findings.

Janis proposed cognitive preparation as the mediating link between

pre and post opeative states. Understanding cognitive preparation may allow for both prediction and input. Cognitive preparation is described as "the work of worry", a form of preparatory work generated by 'anticipatory fear'. Janis states that all stress sources should be anticipated and worked through in advance. When a patient encounters unexpected stress, or has not been able to work through anticipatory fear helplessness and resentment towards staff occur. Janis proposes three situations when such work is not carried out.

i) When a subject usually supresses anticipatory fear

ii) When a stressful event is so sudden it does not allow time for preparation.

iii) False reassurances or inadequate prior warning.

Many studies have tried to alter cognitive factors in the pre-operative phase and monitored effects post-operatiavely. The input varies from information giving (Egbert 1964) or instruction (Healey 1968, Lindeman and Van Aernam 1971) to psychotherapy (Chapman, 1969, Putt 1967). Outcome effects which have differed in treated groups have included physical adjustment, medication usage, length of hospital stay and attitudes. Input in the pre-operative phase has had systematically reported effects on outcome measures although it is still unclear why these inputs cause change, the optimum levels and how it is done. Some studies compared subjects who received input with those who did not, while others controlled for different forms of input. Few studies have looked at optimum conditions and how different patients react.

Johnson (1971) found that information regarding sensations was more

helpful than procedural information. However in this study she did not differentiate between anxiety groups. Andrew (1970) looked at differential effects of information on 'avoiders' 'Sensitisers' and 'neutrals'. In this three by two design patients within groups heard information in the experimental condition and were compared with an uninformed control. The neutrals who recieved information stayed in hospital for a shorter time and requested fewer analgesics; the avoiders required more analgesics, and the sensitizers did not differ. It thus seems that characteristics of patients and psychological input can possibly interact.

In many studies outcome has been measured in a rather haphazard way. These need questioning. Workers seem to put value judgements on outcomes without necessarily justifying that they are indeed 'good'. For example, although one can see that economiclly a shorter hospital stay may be desirable this may be a crude index of "coping". It is not necessarily correct that analgesic use is maladaptive. Analgesic consumption may not be the same as analgesic requests and may reflect hospital prescribing procedure.

Janis notes the direct impact of information regarding unpleasant procedures and its correlation with outcome measures. The informed group felt more worried and fearful before the operation than the uninformed group. However, the informed group were also less likely to report "that they had become angry or emotionally upset during the postoperative period". Janis comments that information can serve as 'stress innoculation'. Ley (1977) voices concern that attempts to confirm this relationship by measuring the impact of the provision of information have often been confounded by the provision of other material such as apparatus instructions,

therapeutic exercises and practical advice. Information effects have been found by Andred (1970), Johnson (1972), Chapman (1964), Putt (1970), Egbert et. al. (1974), Schmitt and Wooldridge (1973), Wallace (1984). Yet other workers have reported no differences as a result of informational input (Vernon and Bigelow 1974; Lindeman and Stetzer 1973). A further group of studies have looked in depth at how patient characteristics interact with information (Andrew 1970), and how informational contect and focus differs (Johnson 1973, Wolfer 1973).

CONCLUSION

The three propositions put forward by Janis can be summarised as follows. There is a curvilinear relationship between pre-operative state and post-operative outcome which can be accounted for by the work of worry which is needed for subjects to prepare for impending stress. Subjects with low anxiety are ill prepared, subjects with moderate anxiety are motivated to gather information, prepare and rehearse and are best equipped. Subjects with high anxiety gather copious amounts of information, may over prepare and do not adjust as well post operatively. The specific tool Janis describes is information. A relation between pre and post operative state has been confirmed, but this is not necessarily curvilinear. Altering cognitions in the pre-operative phase has shown systematic outcome differences. This held true when the nature of input took the form of information.

5.1.2 STUDY AIMS

This study was set up to examine anxiety and communication before and after delivery. Quadratic and linear trends could be examined to test the nature of any relationships. The role of preparatory information and cognitive coping may have bearing on labour and delivery outcome iflabour and delivery can be equated to the operative or stressful event described by Janis. Anxiety is an emotion often linked with pregnancy. Can the progression of anxiety be monitored in a prospective study to shed light on any relationships with labour and post-partum coping? Do 'low' 'medium' and 'high' anxiety subjects differ ante-natally, during labour or post partum and what is the relationship between pre and post labour anxiety levels?

The model provides for 'cognitive coping' which could be measured to investigate levels of preparedness, cognitive rehearsal and the relation these have with anxiety state, information levels and outcome. Janis stressed the importance of information although it is unclear from his, and subsequent studies, exactly what is encompassed by the broad term "information". An understanding of the variety of information outlets, information seeking strategies and information appraisal could be related to cognitive coping and anxiety levels. Satisfaction and anxiety will be examined.

Obstetric outcome could be measured by post labour anxiety levels as well as a range of other 'coping' measures. Janis stated that inappropriate adjustment may lead to "helplessness and resentment of care staff". This could be systematically monitored by rating patients' attitudes towards care staff and outcome measures both of standard medical indices but also of recovery.

5.2 METHOD

5.2.1 SUBJECTS

88 women expecting their first child participated in this study.

5.2.1.1. RECRUITMENT PROCEDURE

Equal groups of subjects (n=44) were recruited from a large urban teaching hospital and a smaller district general hospital by noting the name of all woman due to attend the clinic of at least 38 week's gestation. All women on the list were approached by the researcher during the clinic and asked to participate in the study except for those who could not speak fluent English or who had major obstetric problems. Subjects were told that the study was an investigation into psychological factors related to childbirth and would require two interviews. One woman from Hospital A and three women from Hospital B refused to participate.

5.2.1.2. HOSPITALS

Hospital A was a modern London teaching hospital whereas Hospital B was a district general hospital. Ethical permission was granted for the study on condition that hospital anonymity was maintained. All women were under Consultant care in both hospitals with an option to have early ante natal care shared with their own GP. At

36 weeks gestation the Hospitals resumed ante-natal care. Thus at the point of interview all women were under hospital care. Both hospitals were in mixed catchment areas.

5.2.2 PROCEDURE

Women having their first baby who were of at least 38 weeks' gestation were included in the study. The choice of 38 weeks for the initial interview was made on the following criteria:-

1. Any birth prior to 38 weeks would be considered a premature. Presence at the ante - natal clinic at 38 weeks would by definition denote no risk for prematurity which could cause anxiety for adverse obstetric factors or anticipated illness in the baby and may confound issues in this study.

2. By 38 weeks birth was imminent and would be considered within the normal range if it occurred. Any information seeking would realistically need to be already under way or completed in order to be of any use to the women as exact onset of labour is invariably unpredictable.

Women who agreed to participate in the study were interviewed twice by the researcher. The first interview. the Ante natal interview, took place at 38 weeks gestation while women were still outpatients. The second interview, the Post Natal interview, was conducted within 48 hours following delivery while still an inpatient in hospital.

All subjects were approached and asked to participate in a study by the psychologist who was not connected to the hospital to examine psychological aspects of childbirth. Women were assured that all answers would be confidential and anonymous and that they could withdraw consent at any time during the study. In order to ensure standardised interviews, the questionnaires were completed in the same order. A complete set of interview forms can be found in Appendix 5.

ANTE NATAL DATA

1) STATE TRAIT ANXIETY QUESTIONNAIRE - Women completed both the State and Trait portions of theSpielberger (1970) inventory. Each section comprises 20 questions. The questionnaire generates two scores, one reflecting trait anxiety and another reflecting current state anxiety. This questionnaire was chosen as it was seen as the most reliable anxiety questionnaire in the Johntson (1977) study which intercorrelated a variety of anxiety questionnaires.

2) ANTE NATAL QUESTIONNAIRE - This questionnaire was devised to evaluate attitudes towards ante natal care, expectations about the forthcoming delivery and to investigate information seeking strategies, both in terms of sources and appraisals of such sources. Women rated their ante-natal care on Lickert type scales and detailed their class attendance.

3) INFORMATION QUESTIONNAIRE - This questionnaire contained a list of ten standard procedures used during delivery which the woman may face. They were asked to explain terms in relation to:-

i) why procedures may be carried out,

ii) details of the procedure, and

iii) what they thought it would feel like to have such a procedure performed on them.

The ten procedures contained in the questionnaire were:- Enema; Drips; Induction; Internal Examinations; Entonox; Epidural; Episiotomy; Rupture of membranes; Shaving of pubic hairs; Pethidine.

4) SATISFACTION QUESTIONNAIRE - Here women were questioned with regard to their satisfaction with their ante natal care, their expectations of the forthcoming labour and delivery care, and anxieties thet felt about their labour, their baby and coping with their baby. The answers were scaled on 7 point rating scales. Cognitive coping was measured by indicating how much time they spent thinking about the forthcoming labour (after Hulack et. al. 1979)

POST NATAL DATA

5) POST PARTUM QUESTIONNAIRE - Here women rated their satisfaction with various aspects of care during their labour, delivery and post partum period on a 7 point scale. It also required the women to make an evaluation of the analgesics they used during labour, the information given to them at the time, and the usefulness of the information they had sought during pregnancy on standard rating scales.

6) STATE TRAIT ANXIETY INVENTORY - The women were asked to complete the state portion of the Spielberger inventory (op cit) .

7) INFORMATION QUESTIONNAIRE POST PARTUM - The women were again questioned regarding the 10 procedures previously addressed (questionnaire 3). They indicated whether they hadreceived any of the procedures. Information they were given was rated according to the reasons why the procedure was used, how it was done, and what they felt whilst receiving the procedure.

8) RECOVERY - This inventory comprisd eight items of recovery which the women had to rate on a four point scale. These itemsincluded their present condition, and was intended to generate a standardised outcome measure of recovery. Johnston (1979) defines recovery as aspects of functioning which move in a one way direction. This embodies a working concept of recovery and in this studies utilises measures which reflect a move towards "back to normal" or "full coping".

5.2.3 MEASURES

1. SCORING - All scoring was completed at the end of the study when the last patient had completed the post natal interview to ensure that no prior knowledge of results could affect interviewing strategy. For each subject the following scoring procedure was undertaken:-

2. INFORMATION - After completion of the study all information questionnaires were scored by a doctor (junior registrar in obstetrics). There were 30 questions and they scored 1 point if correct and 0 if incorrect or a response of 'do not know' was recorded. The final score comprised a total over the 30 questions

and could thus range from zero to 30. A further score was gathered noting errors within each category (10 questions referred to how procedures were done, 10 to why they were done, and the last 10 to sensations associated with the procedures).

3. RECOVERY - Johnston (1979) provides a definition of "recovery" as indices that move in one direction. A recovery score was gathered by summing responses on the questions aimed at looking at such a unidimensional shift. These categories were gathered during a pilot study and consultation with the obstetric nursing staff. Staff were asked what the crucial aspects of recovery were on the ward and what the daily checking inventory comprised. These were:- walking, sleeping, bathing, feeding the baby, passing urine, bowel movements, coping with the baby and extent of tiredness. These ranged from inability to do so towards doing it well (or back to normal).

4. EXPECTATIONS - Prior to hospitalisation in the 'ante-natal interview' women generated five expectations of care scored on a 7 point scale. These included admission care, post partum care, care during the actual birth of the baby, immediately after the baby was born and care on the ward. Individual item scores were used or a total score was calculated by summing responses on these five categories. This total was called the 'expectation score'.

5. EXPERIENCES - After the birth (during the post-natal interview) women were asked to rate the actual treatment they had received on the five indices above (expectations). The scores were again totalled to give an 'experiences' score when individual items were not used.

6. COMMUNICATIONS - Women rated four aspects of communication on 7 point scales. These addressed feelings of satisfaction about the way they were spoken to,communications generally, explanations and expectatios of communication. Individual communication scores were used and were also totalled for an overall 'communication score'.

7. ANTE-NATAL SATISFACTION. - After Cartwright (1979) specific and general satisfaction levels were assessed and combined to give an 'ante-natal satisfaction score'.

8. ARDUOUS BIRTH - Oakley (1979) generated a score based on intervention procedures. After Oakley such a measure was generated whereby points for various procedures were given along the following schedule derived from Oakley:-

Episiotomy 2 points: Epidural 2 points: Pethidine 2 :points Entonox 1 point: Forceps 2 points: C.Section 10 points.

9. EXPLANATIONS - Women were asked to rate their satisfaction with information on the procedures they were faced with. A point was given on every occasion a women wanted more information on how procedures were done, why they were done and what it would feel like. The sum of scores generated a score ranging from 0-30. The higher the score the more information the women desired.

5.3. RESULTS

5.3.1. HOSPITALS.

Comparisons between the two hospitals are presented in table 5.1.

TABLE 5.1 COMPRISONS BETWEEN HOSPITAL A(LONDON TEACHING) AND B (DISTRICT GENERAL).

VARIABLE	HOSP A(N=44)		HOSP B(N=44)		T
	X	SD	X	SD	
STAI STATE ANTE NATAL	37.6	10.0	33.9	7.8	1.89 +
STATE ANTE-NATAL ANX	37.9	9.2	32.5	6.8	3.11 **
INFORMATION	17.0	8.0	20.1	7.1	1.82 +
WHY PROCEDURES NEEDED	3.9	2.8	3.0	2.5	1.55
HOW PROCEDURES DONE	4.1	2.6	3.3	2.5	1.32
SENSATIONS	5.0	3.1	4.5	2.5	0.82
RATING BOOKING CLINIC	5.4	1.6	5.1	1.7	.92
HOSPITAL A-N CARE	5.6	1.5	5.2	1.4	1.1
GP CARE	5.8	1.7	5.6	1.4	.66
LABOUR ANXIETY	3.5	1.8	4.2	1.2	2.14 *
BABY ANXIETY	3.6	2.2	3.9	1.6	.62
COPING ANXIETY	4.6	2.0	4.6	1.8	.22
COGNITIVE COPING	2.8	.92	2.6	1.1	.87
HISTORY	0.5	.8	0.2	.5	2.2 *
EXPECTATIONS	28.8	3.6	28.0	4.6	.81

1ST STAGE TIME	514	291	516	284	.03
2ND STAGE TIME	57.6	41.9	35.8	19.3	2.91 **
3RD STAGE TIME	6.4	4.1	5.9	2.7	.56
APGAR 1	7.5	1.4	8.0	1.6	1.64 +
WEIGHT OF BABY	3.4	.5	3.2	.8	1.36
STATE POST PARTUM ANX	33.8	10.9	30.3	7.0	1.79 +
EXPERIENCE	31.3	3.6	31.4	3.1	0.16
ANXIETY DURING LABOUR	3.6	1.7	4.3	1.6	1.97 *
COMMUNICATIONS	19.8	3.4	19.9	2.7	0.18
EXPECTATIONS	5.1	1.8	4.6	1.7	1.4
EXPLANATIONS	2.6	1.9	3.1	1.8	1.4
CLINIC INFORMATION	2.4	1.0	2.4	1.1	0.3
INFORMATION LIKE	2.4	.90	2.0	1.0	2.0 *

+ p<.10 * p<.05 ** p<.01

Women at A tended to have higher trait anxiety scores and had significantly higher state anxiety scores at 38 weeks pregnancy. Women at B tended to have higher information scores and Hospital A women had higher desires for information after delivery. Hospital A women rated anxiety about their forthcoming labour higher, but did not differ in anxiety with regard to their baby or coping. It is unclear whether differences in anxiety were related to personality or hospital factors. These women did have significantly higher obstetric histories of terminations or miscarriages which could account for increased anxiety about the forthcoming labour. However these different levels could be accounted for by lowered information. Expectations of care did not differ significantly.

There were no differences in the length of first stage of labour, but women from Hospital B had significantly shorter second stages. This may be due to the increased use of epidural anaesthesia in Hospital A which can prolong second stage (Chard & Richards 1977). There was a trend for babies in Hospital B to have higher APGAR scores which could be linked to elongated second stage or drugs taken during labour. Evaluation of care and communications did not differ. Table 5.2 below sets out non-parametric comparisons.

TABLE 5.2 COMPARISON BETWEEN HOSPITAL A AND HOSPITAL B (NON PARAMETRIC)

VARIABLE	A	B	CHI 2
GETTING INFORMATION			
% Attending hospital classes	75.0%	54.5%	3.19 +
% Attending other classes	25.0%	32.6%	.29
% Attending NCT	13.6%	4.6%	3.62 +
% Rating Hospital v. useul	35.5%	43.5%	6.5 +
% Rating other v.useful	36.4%	71.4%	3.7
% Reading about pregnancy	100%	97.7%	.00
% Reading Hospital Pamphlet	100%	97.7%	.00
% Reading Popular Press	51.2%	79.5%	6.6 *
% Reading Biology books	7.0%	15.9%	.94
% Reading Medical Books	16.3%	20.5%	.05
% Reading women's magazines	48.8%	56.8%	.28
% Always can ask q at clinic	40.5%	46.5%	.12
% Who find staff too busy	23.8%	30.2%	.18
% Stating staff have no time	11.9%	11.6%	.00
% Who feel too shy to ask	19.0%	4.7%	2.9 +
% Who dont want to know	2.4%	2.3%	.00
% Stating dr does not make it easy to ask questions	14.3%	25.6%	1.06
% Worrying Dr think Q silly	14.3%	7.0%	.55
% Only thinking of q after they are out of the room	21.4%	34.9%	1.3
% Who could not think of Q	14.3%	18.6%	.06
% Who spoke often to friends	37.2%	40.9%	3.3
BIRTH EXPERIENCE			
% Breast feeding their baby	87.2%	63.6%	4.9 *
% Having Caeserian Section	14.0%	6.8%	.55
% Having labour induced	37.2%	20.5%	2.2
% Having episiotomy	84.2%	83.7%	0.0
% Babies going to special care	13.3%	23.3%	.44
% Analgesia on postnatal ward	81.8%	62.1%	.66
% Epidural during labour	59.5%	17.5%	13.5 **
% Pethidine during labour	33.3%	70.0%	9.6 **
% Entonox during labour£	6.2%	22.5%	.02
% No drugs during labour	0	2.5%	.00
% Forceps delivery	28.6%	13.6%	2.06

+ p<.10 * p<.05 **p<.01

£ Entonox is given together with other forms of analgesia.

5.3.2 INFORMATION

There is a trend for more women from Hospital A to attend Hospital classes than Hospital B. This could reflect local availability. Slightly more women from hospital B attended other classes. Women from hospital A were more likely to attend National Childbirth Trust classes. Some women attended two sets of classes and some attended none. Of those who attended classes a good third found them very useful in Hospital A. A similar figure in hospital B found hospital classes very useful, but this rose to 70% for other classes.

Other sources of information would be reading and asking questions at ante-natal clinics. Almost all women (with one exception from Hospital B) stated they had read about childbirth. All had read the hospital pamphlets. Significantly more of the women from Hospital B turned to the popular press and relatively few women looked up facts in biology books. A slightly higher number turned to medical texts (16.3% and 20.5% respectively). About half the women from both samples read articles on childbirth in women's magazines (48.8% and 56.8%).

Only 40.5% and 46.5% respecitvely felt they could ask their doctor for information. Reasons why they may find such approaches difficult seemed consistant across the two groups. Of the whole group, about a quarter felt the staff were too busy. 11.9% and 11.6% stated there was no time for questions in consultations. Only 2% said they did

not want information. It seemed that the atmosphere was not conducive to asking questions or gathering information. There was a trend for women in hospital A to state shyness more often than those in hospital B. This could be an effect of the clinic system or personality variables. 14.3% and 25.6% felt that the doctors did not make it easy for one to ask questions and a small proportion felt their question may be construed as silly. The speed of the interview may have led to such feelings justified by the fact that 21.4% and 34.9% stated they only thought of questions when they were already out of the room. This is a common finding and a re-organisation of a clinic system could take this into account. If it takes time to digest the proceedings of the consultation and women only think of questions afterward, a system for subsequent contact could be imposed which may address this need. Some women feel passive about questions - although they want information they could not think of questions to ask. It is possible that because of status and role factors women desire information but feel that the locus for initiating information lies with the doctor. A high proportion note that they spoke to friends for information about labour. It may be that if information is not available from doctors women turn to their friends. Bourne (78) abhores the situation where women are told "old wives tales". This could be prevented if the information source they desired and the one which was in possession of most accurate facts could be more accommodating to communications.

5.3.3 BIRTH EXPERIENCE

There were equal distributions on the sex of the babies with 47 women having baby boys and the rest baby girls. 37.2% and 20.5% had

their labours induced. 14.0% and 6.8% proceeded to have a caeserian section. The higher rate in Hospital A could be affected by the higher epidural rate (59.5% compared to 17.5% chi square=13.49 p=.0002). Women in Hospital B were given pethidine more often (70% compared to 33.3% x2=9.6 p=.002). Around a quarter of the women were given additional entonox to cope with labour. Only one woman (from Hospital B) had a drug free labour. The episiotomy rate was high in both hospitals (84.2% and 83.7%). 28.6% in Hospital A and 13.6% in hospital B had forceps deliveries and 13.3% and 23.3% of the babies were sent to the special care baby unit. Women from hospital A were significantly more likely to breast feed their babies.

5.3.4. ANXIETY

Anxiety measures were taken both before and after labour. Table 5.3 shows the general scores for the whole sample. The relationship between pre-labour anxiety and post labour outcome was studied by generating a subsample. The ten subjects with the lowest and highest anxiety scores were grouped to provide a 'low' and 'high' anxiety groups respectively. 26 subjects scored at the mean and comprised the 'medium' anxiety group. This division reflects the criteria set by Janis in describing anxiety groups. Table 5.4 gives the results of analyses of variance comparing the relation between these three anxiety levels and pre-operative anxiety, post-operative emotional state, information seeking, knowledge, cognitive coping, labour outcome indices and satisfaction with communiction. Both

linear and quadratic relationships are examined in order to test the nature of the relationship.

TABLE 5.3 ANXIETY MEASURES n=88

	MEASURE	MEAN	(Hospital A	B)	RANGE	S.D.
A/N	STAI trait	35.2	(37.6	33.9)	20-63	8.5
	STAI state	35.8	(37.9	32.5)	21-66	9.1
	LABOUR ANXIETY	3.8	(3.5	4.2)	1-7	1.6
	BABY ANXIETY	3.8	(3.6	3.9)	1-7	1.9
	COPING ANXIETY	4.6	(4.6	4.6)	1-7	1.9
POST PARTUM state		32.1	(33.8	30.3)	20-71	9.3

TABLE 5.4 COMPARISON OF LOW,MEDIUM AND HIGH ANXIETY GROUPS.
ANALYSIS OF VARIANCE (LINEAR AND QUADRATIC)

VARIABLE		MEAN SCORES			
		LOW	MEDIUM	HIGH	
		n=10	n=26	n=10	
INFORMATION SCORE		17.90	18.29	15.10	
SOURCE	S.S	D.F	M.S	F	SIG
B	74.2	2	37.1	.6	.5
L	39.2	1,41		0.7	.4
Q	35.0			0.6	.5
WHY PROCEDURE NEEDED		4.88	2.92	4.78	

SOURCE	S.S	D.F	M.S	F	SIG
B	24.7	2	12.3	1.7	.2
L	2.9	1,40		0.4	.5
Q	21.8			3.0	.09

HOW PROCEDURE DONE	4.00	3.88	3.10	
SOURCE	S.S.	D.F	M.S	F	SIG
B	0.8	2	0.4	0.05	.9
L	0.2	1,41		0.07	.8
Q	0.5			.1	.8

KNOWLEDGE OF SENSATION	4.50	5.00	5.90	
SOURCE	S.S	D.F	M.S	F	SIG
B	10.2	2	5.1	0.6	.5
L	9.8	1,41		1.2	.3
Q	0.4			.05	.8

NO.REASONS (NOT ASK DR)	.60	1.21	2.78	
SOURCE	S.S	D.F	M.S	F	SIG
B	24.4	2	12.2	7.6	.001
L	21.9	1,40		13.7	.0006
Q	2.4			1.5	.2

COGNITIVE COPING	2.70	2.92	2.20	2.466 +

EXPECTATIONS	31.70	30.69	29.10	
SOURCE	S.S.	D.F	M.S	F	SIG
B	34.7	2	17.4	0.4	.4
L	33.8	1,43		0.8	.4
Q	1.0			0.02	.9

HISTORY			.11	.16	.78
SOURCE	S.S	D.F	M.S	F.	SIG
B	2.9	2	1.4	4.1	.02
L	2.0	1,40		5.8	.02
Q	0.8			2.4	.13

TIME (1ST STAGE)			444.4	528.8	420.0
SOURCE	S.S	D.F	M.S	F	SIG
B	98528	2	49264	0.8	.5
L	2688	1,39		0.04	.8
Q	95839			1.5	.2

APGAR			7.50	7.70	7.63
SOURCE	S.S	D.F	M.S	F	SIG
B	.27	2	.13	.05	.9
L	.07	1,38		.03	.9
Q	0.2			.1	.8

STAIS POST PARTUM			28.30	30.28	42.00
Source	S.S	D.F	M.S	F	SIG
B	1201	2	601	8.3	.0009
L	938	1,42		12.9	.0008
Q	263			3.6	.06

RECOVERY			15.60	16.50	18.80
				2.1	.2

COMMUNICATIONS			15.50	14.89	14.40
SOURCE	S.S	D.F	M.S	F	SIG

B	6.1	2	3.1	0.5	.6
L	6.1	1,43		0.9	.3
Q	0.04			0.008	.9

CARE APPRAISAL		32.00	31.96	29.10	
SOURCE	S.S.	D.F	M.S	F	SIG
B	64.6	2	32.3	3.0	.06
L	42.1	1,43		3.9	.05
Q	22.5			2.1	.2

INFORMATION APPRAISAL		22.00	20.31	21.40	
Source	S.S.	D.F	M.S	F	Sig
B	2	23.7	11.9	.5	.6
L	1.8	1,43		.07	.8
Q	21.9			.8	.4

ANTENATAL SATISFACTION		12.50	10.58	10.00	
SOURCE	S.S	D.F	M.S	F	SIG
B	36.4	2	18.1	2.8	.07
L	31.3	1,43		4.7	.04
Q	5.1			0.7	.4

OVERALL SATISFACTION		33.30	30.42	29.30	
SOURCE	S.S	D.F.	M.S.	F	Sig
B	88.7	2	44.4	2.6	.08
L	80.0	1,43		4.7	.03
Q	8.7			0.5	.5 ns

KRUSKAL WALLIS				CHI 2
USEFULNESS OF CLASS(is)	9.36	16.56	19.67	6.001*
BOOKING CLINIC	31.45	21.10	19.30	5.824*
HOSPITAL AN CARE	28.80	22.90	19.75	2.544
LABOUR ANXIETY (is)	27.44	23.96	14.40	5.977*
COPING ANXIETY (is)	23.40	25.37	18.75	1.810
BABY ANXIETY (is)	25.30	24.62	18.80	1.639

* p> .01

From this table it can be seen that, in all but one case, where there are significant differences these are of the linear form rather than quadratic. The only variable which has a tendency to a quadratic relationship such as postulated by Janis is the error score on why procedures are needed. Janis reported that anxiety groups would gather information differently and he accounted for differences in post-operative emotions in terms of the "work of worry" carried out using such information. The groups did not differ significantly on information they had or retrospective appraisal of the information. There were no differences in error scores about how procedures are carried out and what sensations to expect, yet the understanding of why they are done does render a significant quadratic trend similar to Janis' postulations. The low and high anxiety groups had greater numbers of errors (and correspondingly lower numbers of accuracies) on this measure, which may reflect a somewhat deeper understanding of information rather than simply knowing from classes what will be done and what it may feel like. (Quadratic $F = 3.001$ ($df = 2,42$) $p = .090$; Linear $F = 0.320$, $p = 0.575$).

The measure of cognitive coping (i.e. the amount of time patients spend thinking about their forthcoming labour and delivery) showed the medium anxiety group spent the least time (inverted scale) and the high anxiety group the most time thinking about the event. (F=2.466 df (42,2)p=.097)

Anxiety level did not differentiate the groups in terms of the labour time nor did it affect the condition of the baby at birth. There were significant differencesbetween the groups on the measure of post partum anxiety. Again, the nature of the difference was linear. (F=8.300 df (42,2) p=.0009). Recovery and appraisal of communications did not differ significantly. Low anxiety subjects rated satisfaction higher for both ante-natal and overall appraisal.

A count was made of the number of reasons patients put forward to explain an inability to approach their doctor for information. There was a significant linear relationship (f=14.060,p=.0006, df=2,42) with regard to the number of reasons put forward. Highly anxious patients had accounted more obstacles in approaching their doctor for information.

These results thus show that the different anxiety levels do not necessarily mean different information levels, but there may be differences in what patients do with the information, as reflected in the cognitive coping measure. There also seems to be an interesting context effect, in that although the patients had the same information levels, the higher anxiety groups had more difficulties in approaching their doctor for information. It does not seem likely that a higher anxiety level changes the needs of the

patients generally, as they had similar expectations of care. However, there did seem to be a difference in terms of what level of care they received, as the retrospective appraisal shows the lower anxiety groups to rate this higher in spite of the fact that there were no differences in the prospective phase in terms of expectations. It may thus be that the problem with anxiety is not simply bound up in the patient and their own adjustment to surgery or labour, but there is a crucial role here from the care givers and their response to anxiety levels in patients. It seems that low anxiety patients report a different reaction when interactions with caregivers is questioned. Thus it may not be a simple matter of incomplete preparation by higher anxiety patients as noted by Janis, but a more complex interaction of the way in which care staff relate to patients with different anxiety levels, and the impact this in turn, has on their experiences. Anxiety expression needs to be looked at in its context.

Appraisal of care may reflect both care given and staff reactivity to patient anxiety.

The non-parametric analysis showed that although most subjects attended some form of class, the low anxiety groups found these more useful. When asked generally about hospital ante-natal care, there were no significant differences between the three groups on satisfaction. Satisfaction ratings for booking clinics differed significantly. ($X2=5.824$, $p=.054$) The anxiety provoker may be the

forthcoming labour (groups differed significantlyon this item (X2=5.977 p=.050), yet there were no significant group effects when rating anxieties about the baby or coping. When questioned after their labour, anxiety levels do not affect retrospective rating of anxiety. They may have been equally anxious at the time,despite pre-operative differences, or perhaps midwifery care was able to match support in such a way as to equalize (indeed minimize) such anxiety. Another possibility which relates directly to Janis' porposals may be that the crucial variable is anticipatory anxiety rather than actual anxiety at the time of the event.

5.3.3 SUMMARY

A relation between preoperative anxiety and postoperative emotional state was found, the nature of which, in this study (measured by State levels of post partum anxiety) was predominantly linear. Appraisal of care and overall satisfaction both showed significant differences according to group factors. In both cases these were again linear (care F=3.881,p=.055; satisfaction F=4.735, p=.035). Johnston (1979) points out that there may be a stable personality componant of anxiety and looks at anxiety change to see if this renders a similar picture. A similar analaysis will be carried out next for the sample as a whole.

Knowledge levels (scored by the information test) and information appriasl do not differentiate the groups significantly. However, when the information test score was collapsed into its three components it was found that patients did not differ in rating how procedures were done nor on knowledge of the sensations involved,

but there was a trend for a quadratic difference when patients are asked why a procedure was needed (F=3.001, p=.090). Similarly, the measure of cognitive coping differed between groups (F= 2,5: p=.09). It may be that in spite of going to classes, and generally seeking and receiving information, the level of understanding varies and this may be the crucial variable determining utilisation of information. Cognitive coping shows a quadratic distribution. The medium anxiety group think least about the forthcoming labour/delivery. The relation between anxiety group and number of reasons presented for not approaching the doctor showed a significant linear relationship. (F=14.060 p=.0006). Obstetric history related to anxiety level. Higher anxiety subjects had higher previous obstetric complications. This confirms Kumar and Robson's finding that anxiety may relate to the viability of the fetus.

Recovery did not differ between groups. The means present in a linear fashion, but do not reach statistical significance. Labour time was not significantly different,nor was the condition of the baby at birth. However, all the low anxiety group breast fed their babies (compared with 70.8% of the medium and 75.0% of the high anxiety groups). The only two caeserian sections were carried out on subjects in the medium anxiety group. None of the low anxiety group received any analgesia on the ward in the first 48 hours (compared to 60% of the medium and 71.4% of the high anxiety groups).

The next section will examine the impact of the course of anxiety as opposed to absolute levels of anxiety.

5.3.3 COURSE OF ANXIETY.

Repeated anxiety measures allows an examination of the course of anxiety over labour. Johnston (1982) described habitual levels of state anxiety by measuring anxiety five weeks after surgery and then compared these levels with anxiety at the time of surgery. By subtracting the two she generated a measure of elevated anxiety. However, she does not give reasons to validate the five week measure. Indeed the very nature of state anxiety is that it will vary.

A more meaningful concept would be simply to look at anxiety change without making claims at habitual or resting states. In this study state anxiety measures were taken both before and after labour. For the whole group ante-natal anxiety was significantly higher than post partum anxiety (mean ante-natal = 35.791, mean post partum =32.083, t= p=0001). A closer examination of the data reveals that for most individuals anxiety stays equal or decreases (n=60), yet there are a few (n=28) where it increases. Table 5.5 compares these two groups.

Patients whose post partum anxiety increased did not differ significantly from the others in terms of the amount of knowledge they had (information score) but increased anxiety subjects rated the usefullness of information higher when questioned after delivery (t=2.04, p=.04 (df =86). The group with increased anxiety were significantly higher in their recovery score (higher scores denote

greater recovery), yet the group with decreased anxiety rated their care on the ward more favourably. This would tentatively suggest that there is possibly an explanation of recovery along the lines of Janis' theory. If the work of worry in the pre-labour phase is to be useful, it does have benefits in post partum recovery. However, this only holds true if the worry is dealt with and subsides in the post partum period. Thus it does not seem that it is simply the level of anxiety per se that is crucial, but rather the course of anxiety. There were no significant differences between the groups on the ante-natal measure of Trait anxiety (t=.53 (df=82)p=.60). The patients who constitute the decreased group have significantly higher ante-natal State Anxiety scores and subsequently significantly lower post-partum State Anxiety scores.

TABLE 5.5 T-TEST COMPARING VARIABLES BETWEEN GROUPS WHERE ANXIETY INCREASES AND DECREASES.

VARIABLE	DECREASES n=60		INCREASES n=28		T(df=86)
	MEAN	SD	MEAN	SD	
RECOVERY	15.62	3.43	18.11	5.73	2.54 **
INFORMATION RATING	19.80	4.52	21.89	4.40	2.04 *
TRAIT ANXIETY	34.88	8.97	35.92	7.63	0.53
STATE ANXIETY (AN)	37.78	9.05	31.68	7.95	3.04 **
HISTORY	00.33	0.72	00.24	0.52	0.59
EXPECTATIONS	30.70	6.60	30.57	6.77	0.08
APPRAISAL	31.40	3.40	31.14	3.33	0.33
COMMUNICATIONS	15.08	2.26	14.61	2.96	0.83
INFORMATION SCORE	18.74	7.77	18.11	7.64	0.34
TIME (1ST STAGE)	493.11	281	568.04	295	1.05

APGAR	7.72	1.41	7.74	1.77	0.05
STATE ANXIETY (PP)	29.07	6.67	38.81	10.84	5.05 **
CARE ON WARD	5.87	1.17	5.14	1.48	2.41 **
CARE DURING LABOUR	6.43	1.08	6.61	0.69	0.78

* $p<.05$ ** $p<.01$ (t-tailed t-test)

One difficulty with this group is that their anxiety is still elevated. Janis does not comment on the course of anxiety for those undergoing the work of worry. Are those with elevated anxiety constantly anxious and always doing the work of worry or would such work, when completed, reduce subsequent anxiety levels. If such work had been successfully completed one may predict that anxiety levels would subside.

The groups did not differ one measures of expectations,the realization of those expectations or communications. Their labours were not longer, nor was the APGAR score of their baby significantly different. Previous obstetric history was not a factor and medical care during labour was not rated differently. The group with increased anxiety appraised medical care on the ward lower ($t=2.41$ $df=86$, $p=.018$). Once again there seems to be an interactive measure with the context of the ward and care delivery. Staff may react less well, or differently to this group because they are anxiousor the patients may be dissatisfied with care and thus experience anxiety. There is more evidence for the latter. The increased anxiety group were recovering (i.e. moving back to normal) faster than the other group. This may require control and self-dependance which may threaten the role of the staff. One would imagine that staff would respond favourably to those recovering quickly unless,

of course, recovery goes hand in hand with independence which excludes or threatens the role of the nursing staff and thus forms a source of conflict. This may not be overt as these groups do not differ on any measures of communication appraisal. This would surely not be so if there was an area of friction. The differences cannot be attributed to different expectations as there is no evidence to suggest this both on the measure of expectations during the ante-natal period (i.e. prior to the event), and during the post partum period when these expectations were judged.

Johnston (1982) discussed anxiety elevation whereby habitual levels of anxiety (as measured by Trait Anxiety) may affect the state scores. By looking at Anxiety change she attempted to control for the variable of 'Habitual Anxiety' and under these circumstances found not only a curvilinear relationship, but noted elevated post-operative levels of anxiety in the moderate group. Utilising a measure of anxiety groups based on anxiety elevation presumes, of course, that Johnston's finding that anxiety was elevated after surgery holds true in the obstetric field. The results from this study do not show this. Only four subjects showed no change, 56 subjects showed a decrease in anxiety after labour and 28 showed an increase in anxiety after labour. It would be meaningless to generate anxiety groups based on elevation scores here as it is difficult to know how such a group differs from those who experience no elevation and indeed those who experience a decrease. What would meaningfully constitute a "low anxiety group", or a "High Anxiety group". Is a low elevation the same as a decrease? Perhaps the important concept that Johnston is referring to relates more to the course of anxiety over these periods rather than absolute categorisation. On this ground it does seem meaningful to compare

different courses, independant of "habitual anxiety".

5.3.4. SATISFACTION

Ante-natal and post partum satisfaction and expectations were recorded. Satisfaction with information was rated for ante-natal classes, explanations during labour and delivery, the explanations about procedures they were exposed to and retrospective global and specific satisfaction levels.

5.3.5 GLOBAL SATISFACTION LEVELS.

A satisfaction score was generated by summing scores for the 4 post partum and 2 ante-natal questions generating a measure ranging from 17 to 41 with a mean of 30.7 and a mode of 29.0 (sd 4.5). Table 5.6 below sets out correlations between satisfaction and other variables.

TABLE 5.6 CORRELATIONS BETWEEN SATISFACTION AND OTHER VARIABLES.

VARIABLE	R	(n)
RECOVERY	.55	(68)**
EXPECTATIONS	.41	(76)**
EXPERIENCES	.82	(82)**
INFORMATION SCORE	.20	(71)*
WHY PROCEDURE NEEDED	.10	(76)
HOW " DONE	.17	(74)+
SENSATION KNOWLEDGE	.12	(79)
STATE ANXIETY (AN)	-.18	(79)*

TRAIT ANXIETY (AN)	.14	(75)
STATE ANXIETY (PP)	-.20	(84)*
LABOUR TIME	.05	(72)
OBSTETRIC HISTORY	.21	(74)*
BABY APGAR	.20	(78)*
COGNITIVE COPING	.01	(77)

*p> .05 ** p>.01

Satisfaction was significantly correlated with recovery, expectations and experiences. It correlated significantly with information scores and there was a significant negative correlation between current state anxiety and satisfaction although there was no relation to trait anxiety. Length of labour did not relate to satisfaction but obstetric history did. It could be that a previous adverse experience set the current experience in a more favourable light. Satisfaction also correlated with the APGAR score of the baby.

Satisfaction may be accounted for by meeting of expectations irrespective of level of expectation. Women rated expectations on five issues in the ante-natal interview and after labour rated those aspects of care. Groups can be generated depending on whether expectations were met, exceeded or frustrated. Table 5.7 sets out a comparison between these groups.

TABLE 5.7 ANALYSIS OF VARIANCE OF THE EFFECTS OF EXPECTATION ON OUTCOME

VARIABLE	MEAN SCORE			F
	MET	LET DOWN	IMPROVED EXCEEDED	
	N=12	N=24	N=52	
RECOVERY	16.75	16.75	16.17	.178
INFORMATION SCORE	20.58	17.86	18.30	0.524
AN TRAIT ANXIETY	32.27	35.48	35.76	0.767
LABOUR TIME	536.4	468.9	533.6	0.403
HISTORY	0.36	0.55	0.18	2.406 +
AN STATE ANXIETY	34.67	35.67	36.12	0.123
PP STATE ANXIETY	31.17	31.91	32.39	0.086
COGNITIVE COPING	2.25	2.88	2.68	1.628

+ $p<.10$ trend

From these tables it seems that meeting of expectations does not differentiate the groups on recovery rate, information, score, anxieties, labour outcome or cognitive coping. There was a tendency of those who felt let down to have greater previous obstetric complications ($f=2.4$ $p=.09$).

5.3.6. ANTE-NATAL CLASS ATTENDANCE

57 subjects (64.8%) attended hospital ante-natal classes. 25 subjects, (28.4%) attended other classes. 12 subjects (13.6%) did not attend classes. 7 subjects went to both hospital and other ante-natal classes.

5.3.7 CLASS APPRAISAL

Of the group who attended hospital classes 24 (51.1%) missed one or more meeting. As the classes only meet six times (plus a visit to the wards) this means that missing a class may have considerable impact in the amount of knowledge gathered. Of the other group 8 subjects (9.1%) attended classes run by the National Childbirth Trust, and the remainder attended classes run by Local Authority Midwives. Table 5.8 shows the appraisal of class content.

TABLE 5.8 . APPRAISAL OF CLASS CONTENT

RATING	GROUP	
	HOSPITAL (N=56)	OTHER (N=25)
THOROUGHLY COVERED	66.1%	72.0%
QUITE WELL	30.4%	28.0%
SLIGHTLY	3.6%	-
NOT AT ALL	-	-

The majority of women attending both hospital and other classes felt that the content reflected either a thorough or fairly good coverage of the things they wanted to know about. No-one expressed dissatisfaction. Subjects were asked how useful they found the

class both before and after labour.

TABLE 5.9 RATING OF USEFULNESS OF CLASSES (ANTE-NATAL AND POST PARTUM)

RATING	HOSPITAL		OTHER	
	A/N	P/P	A/N	P/P
	(N=56)	(N=57)	(N=25)	(N=24)
VERY	38.9%	37.9%	56.0%	62.5%
QUITE	48.1%	48.3%	40.0%	33.3%
SLIGHTLY	11.1%	13.8%	4.0%	-
NOT AT ALL	1.9%	-	-	4.2%

The majority of women rated classes as useful when quetioned before and after labour. Those who attended other classes rated them marginally higher in retrospect.

5.3.8 REASONS FOR ATTENDANCE

Women were questioned about class attendance. 13.6% of the sample did not attend any form of class. 6 Women attended more than one sort of class. Table 5.10 sets out the reasons why women decided to attend classes.

TABLE 5.10 REASONS FOR ATTENDING ANTE-NATAL CLASSES

REASON FOR ATTENDING (n=76)	% WOMEN (n=88)
DOCTOR SUGGESTED IT	9.1%
EVERYONE IS SUPPOSED TO GO	2.3%

I FELT IT WAS IMPORTANT	55.7%
FRIENDS,FAMILY OR OTHER	3.4%
OTHER	17.0%

REASON FOR NOT ATTENDING	TOTAL	% NON ATTENDERS
INCONVENIENT TIME	6.8%	50.0%
DID NOT KNOW ABOUT THEM	3.4%	25.0%
DID NOT WANT TO GO	2.3%	16.7%
OTHER REASONS	1.1%	8.3%

55.7% of the sample felt an active desire to attend classes. A further 9.1% were pesuaded by advice from their doctor and 2.3% by friends and family. Of those who did not attend, inconvenient time was often cited. This may have been due to the fact that classes were held mostly during the day. This could make it difficult for working mothers to attend classes and almost impossible for working fathers to do so. (The latter group were not invited to classes except in the case of the National Childbirth trust who invited and encouraged spouse attendance and held classes in the evening. Table 5.11 below sets out reasons provided for attending classes.

TABLE 5.11 PRIMARY REASON FOR WANTING TO ATTEND CLASS

REASON	% STATING THIS REASON*	
	HOSPITAL	OTHER
PSYCHOPROPHYLAXIS (exercises)	17.9%	31.8%
PREPARATION CHILDBIRTH	64.3%	59.1%

OPP. TO TALK WITH OTHER MUMS	1.9%	9.1%
TO GET TO KNOW STAFF	13.0	9.5%
TO HAVE MY QUESTIONS ANSWERED	12.5	10.0%

*(figures exceed 100% as some women gave more than one reason as a primary factor in class attendance).

In terms of information gathering, women mostly respond that they want 'preparation' (passive) as opposed to 'questions answered ' (active). 17.9% and 31.8% (hospital and other respectively) wanted to attend for exercise training, and a few for more social reasons, i.e. getting to know staff who would take care of them or other women in similar situations.

5.3.9 PREGNANCY LITERATURE

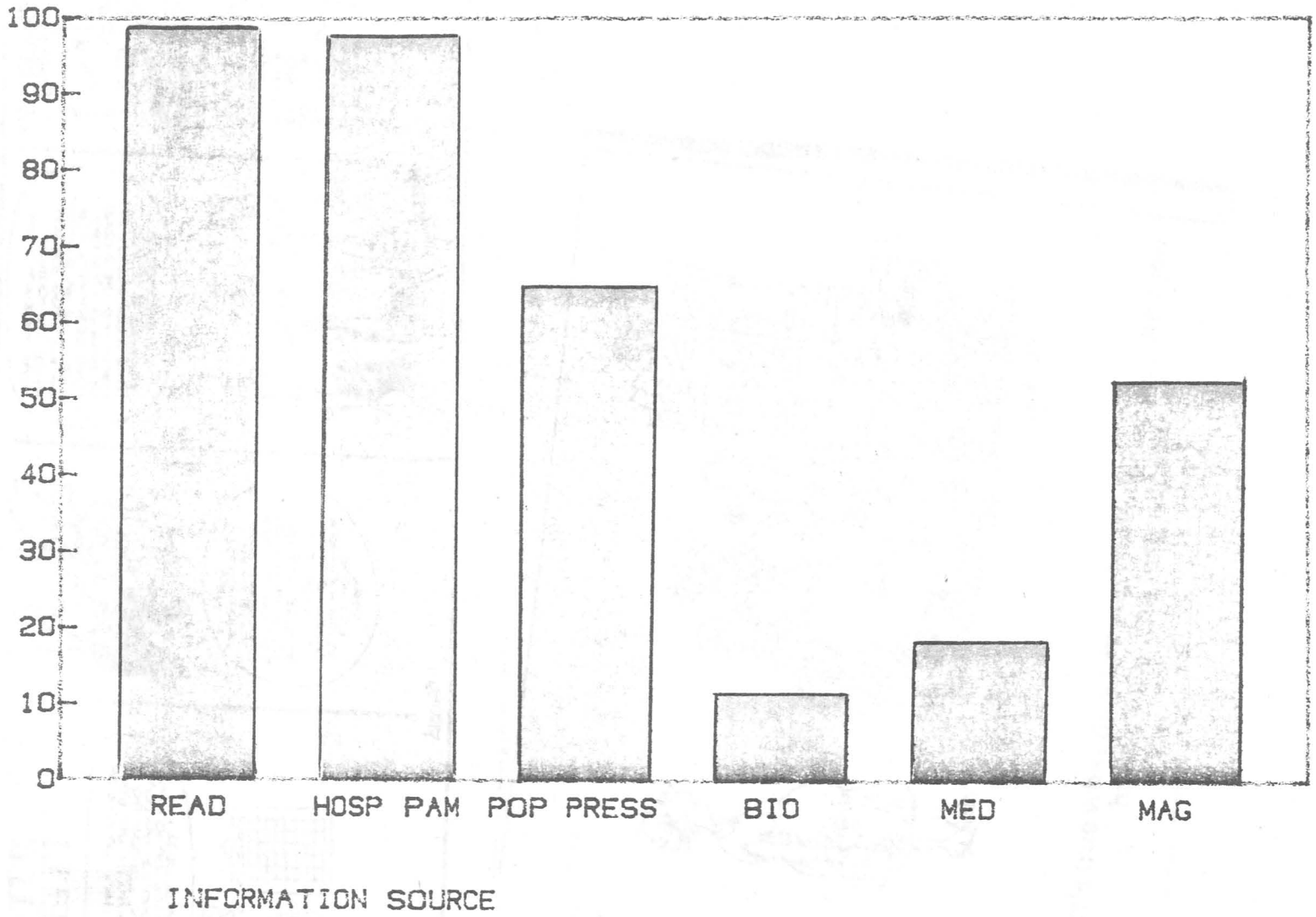
Most women received information from a many sources (see Table 5.12) Women almost all read about their forthcoming childbirth with many having read the hospital pamphlets (97.7%). This seems an excellent source of information imparting, yet an analysis of this channel shows a lot to be desired. The booklets generally available are printed with copious numbers of advertisements. These reduce the credibility of the content and also put forward ambiguous messages to the women. The portrayal of the women in them is often degrading in cartoon type sketches. Inset (5.13) gives a few exmples of pictures from these books. They are often aimed at a population which may differ from the individual population within a hospital catchment area. It did seem sad that none of the hospitals took advantage of this opportunity to print its own custom made information sheets.

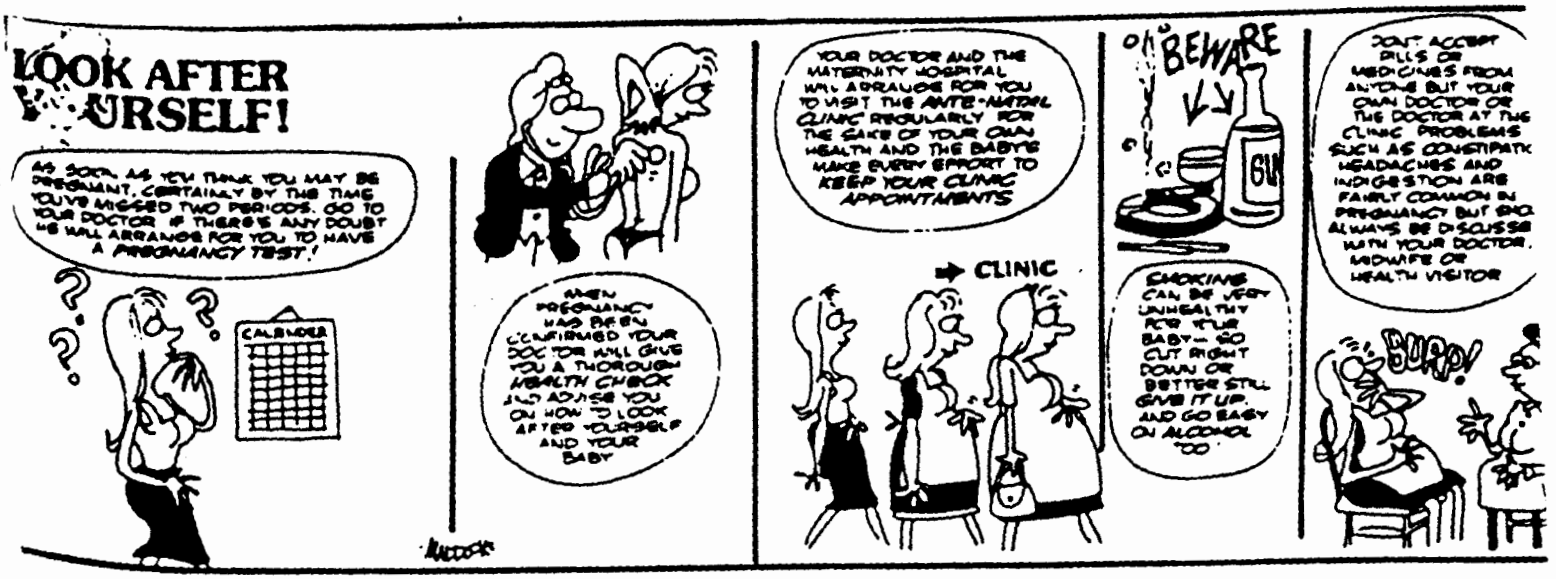
Of course a substantial proportion of women turned to popular press and magazines for information, and a smaller, but significant group to more detailed sources such as biology or medical text books.

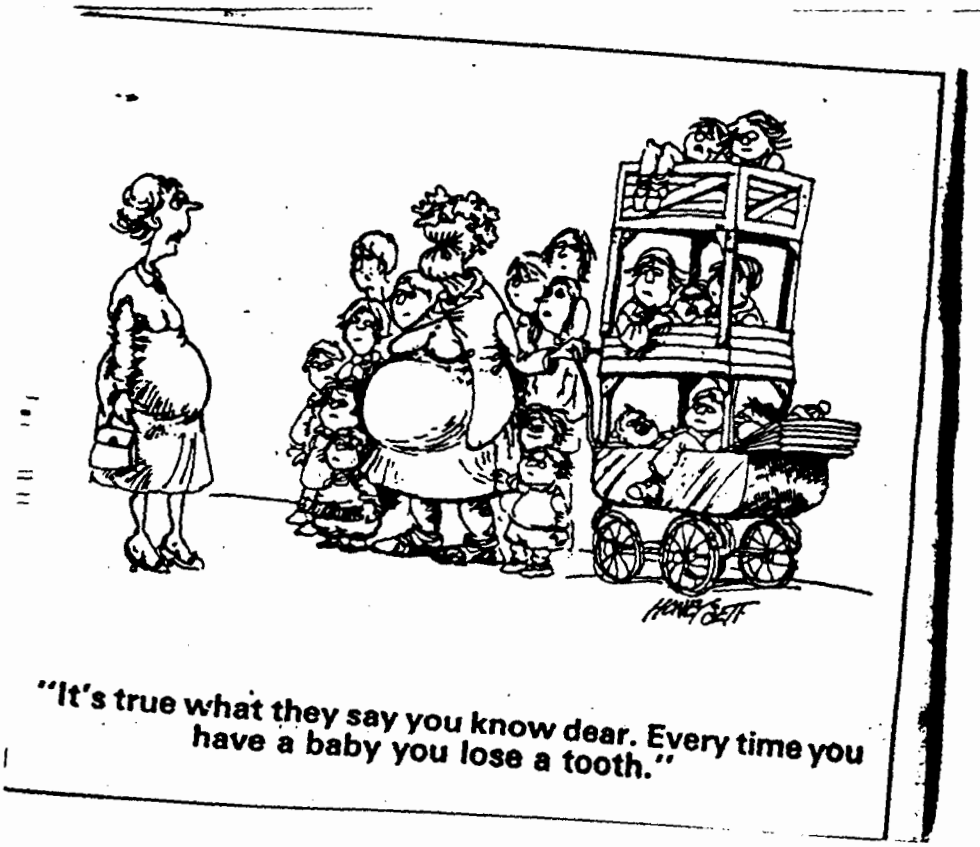
5.3.10 INFORMATION NEEDS BEING MET

Women were asked to note who they would turn to as a first choice for their information. The most preferred category for information

5.12 INFORMATION SOURCES USED







"It's true what they say you know dear. Every time you have a baby you lose a tooth."

was the women's own general practitioner (39.8%) despite the fact that there were no General Practitioner Deliveries, and all these women were booked under Consultant Care. In spite of the fact that only a small proportion ever saw the Consultant, 10.2% preferred this individual as their information source. Only 9.1% wanted information primarily from the hospital doctor, and 13.6% from the midwife. In all 73.9% of the sample wanted their information from a medical source. This is in sharp contrast with the next table which sets out the ease with which women feel they can approach the doctor for information.

TABLE 5.14 DIFFICULTIES IN APPROACHING DOCTOR FOR INFORMATION

REASON	% WOMEN RESPONDING
THE DOCTOR HAS NO TIME	11.4%
PATIENT DOES NOT WANT TO KNOW	2.3%
TOO SHY TO ASK	11.4
DR. DOES NOT MAKE IT EASY TO ASK	19.3%
WORRIED QUESTION WILL BE SEEN AS SILLY	10.2%
ONLY THOUGHT OF Q.WHEN OUT OF ROOM	27.3%
COULD NOT THINK OF QUESTION TO ASK	15.9%

The general atmosphere of the consultation was not conducive to question asking for a proportion of women. However, in only a fraction of cases (2.3%) is this attributed to a desire on the behalf of the patient not to know. In table 5.15 women rated these channels of information after the labour and delivery.

TABLE 5.15 RETROSPECTIVE APPRAISAL OF INFORMATION

SOURCE	% RATING USEFULNESS OF SOURCE			
	VERY	QUITE	SLIGHT	NOT AT ALL
HOSPITAL CLASSES	37.9%	48.3%	13.8%	-
OTHER CLASSES	62.5%	33.3%	-	4.2%
LITERATURE	37.5%	34.1%	18.2%	7.1%
FRIENDS	19.3%	34.1%	33.0%	13.6%
CLINIC INFORMATION	22.7%	33.0%	23.9%	19.3%

Overall women found the classes, be they hospital or other, most helpful. Just on a quarter of the sample found literature they had read to be either only slightly useful, or not at all useful. This may reflect the standard of the literature given out from the hospital as most women read this. Just under half the women felt that information from friends had been only slightly helpful or indeed not at all helpful. Nearly a fifth of the women found information given by the doctor in the clinic was not at all useful - in spite of the fact that this was their desired source of information. A further 23.9% found this only slightly helpful. Classes seemed to meet a need but not for all. Written literature and doctors were two other sources often noted. If women are unsuccessful in obtaining information from their doctor they will turn to their contemporaries which, on reflection, is not highly praised. Improving the doctor/Patient interactions may address the informational needs of these patients. Ante-natal classes lived up to expectation for those who attended them. The proportion of women who never attend classes rely soley on the other forms of information exchange.

5.3.11 DOCTOR PATIENT INTERACTIONS

Models of doctor patient interactions (Byrne and Long 1971) looked at patient and doctor centred styles. Herzlich (1973) describes different approaches to health such as those who study their ailment, complainers, and those who view illness more mechanically where technical mending is required. Szasz and Hollender (1970) proposed three basic models of interaction - an inert unresponding patient with an active doctor - a guiding doctor with a cooperating patient which involves a powerful doctor who presents guidance and leadership but in return expects cooperation obedience and no disagreement or argument in relation to "orders" - and a mutual cooperation situation where both parties have equal status, are equally dependent and work together for an outcome goal.

Generally such models differentiate between passive and more active/ interactive patients. Passivity and activity in information seeking was measured by questioning women about the reasons for attending ante-natal classes. The range of responses are presented in table6.10. Of those responding (n=54) women tended to take one of two stands. They either quoted attending classes in order that the hospital could 'prepare them' (passive n=45), or 'for opportunities to have their own questions answered' (active n=9). As there is no data available estimating the role taken by the doctor, it would be of interest to see if there are any differences between the women who approach information in these two different styles. Information approach style is not independent and interacts with information

style of attending doctor. Table 5.16 compares active and passive women.

TABLE 5.16 COMPARISONS BETWEEN ACTIVE AND PASSIVE INFORMATION SEEKING

VARIABLE	MEAN SCORE PASSIVE N=45	ACTIVE N=9	T (2 TAIL)
INFORMATION SCORE	20.10	18.75	0.49
WHY PROCEDURE NEEDED	3.14	2.50	0.74
HOW PROCEDURE DONE	3.13	3.75	0.67
SENSATION	4.16	5.0	0.74
COGNITIVE COPING	2.72	3.00	0.79
ANXIETY PP	31.19	32.00	0.22
CARE DURING BIRTH	6.86	6.67	1.20
CARE IMMED. AFTER	6.50	5.89	1.89 +
LABOUR EXPECT. MET	5.19	3.67	2.65 **
NO. REASONS.APP DR	0.88	1.56	1.72 +
EXPECTATIONS	31.20	30.22	0.40
EXPERIENCES	31.78	29.44	1.98 *
COMMUNICATIONS	20.71	17.56	3.37 **
SATISFACTION	31.47	27.00	2.97 **
CARE ON THE WARD	5.96	4.67	2.81 **

+ p<.10 *p<.05 ** p<.01

Different information approach styles did not differentiate the women in terms of their information level, nor what they do with information (cognitive coping). The active women, though not siginficntly different in post partum anxiety, are significantly less satisfied with care immediately after the delivery of the baby and

with care on the ward (t=2.81, p=.007). They are significantly less satisfied with communication (t=3.37 p=.001), perhaps because their desire for interaction is not met, or where a conflict of styles occurs. Furthermore, although they do not differ in terms of their expectations, they are significantly less satisfied with these being met (t=2.65 p=.01). There is a tendency for these women to give more reasons for finding difficulty approaching their doctor during the ante-natal period for information. This may be due to the fact that these women place more demands on the doctors, or it may be that the doctors put up more defences and truly do present a greater number of obstacles for these women in approaching them if their consulting style differs from the one desired by the women.

Of the 21 mothers who did not breast feed their babies, all (100%) come from the 'passive' group. None of the active group ended up with a caeserian section (compared to 11.5% of the passive group) and only 1 (11.1%) of the active group was induced, compared to 24 (30.8%) of the passive group. Lastly only two of the active group received analgesia on the post-partum ward,compared to 25 in the passive group.

Breast feeding needs positive decision making and many mothers need to be taught the skills. Passive patients may not actively seek out help and are thus not taught the skills of breast feeding. Passivity may also determine staff reaction in terms of analgesia. Cartwright (1978) noted that analgesia may render a labouring woman easier to deal with. Passive subjects may be more likely to have intervention in the form of inductions and epidurals and these themselves can increase the possibility of further intervention such as caeserian sections. This could be endorsed by the finding that many of the

passive group received analgesia on the ward. On the other hand it may not be that passivity determines medical treatment. There may be treatment routines and active individuals may be more vociferous about opposing these. The staff may have routine guidelines, and only focus on individual merits if called upon to do so or challenged. Active women may challenge routine care or enforce individual assessment whereas passive women may be more accepting.

5.3.13. FEEDING

62 Women breast fed their babies and 21 chose to bottle feed their baby. There was no data on the remaining five women as these babies were in special care and mothers had not yet decided on feeding. Table 5.18 compares women who breast and those who bottle fed.

TABLE 5.18 DIFFERENCES BETWEEN BREAST AND BOTTLE FEEDING MOTHERS.

VARIABLE	MEAN SCORE		T
	BOTTLE (n=21)	BREAST (n=62)	2 tail
NUMBER OF REASONS	1.8	1.1	2.10 *
ANTE-NATAL ANXIETY	20.1	17.0	0.70
ANTE-NATAL TRAIT	35.1	34.7	0.18
INFORMATION SCORE	15.6	19.6	2.00 *
ERROR SCORE: WHY	4.9	3.0	2.57 **
HOW	4.8	3.3	2.40 *
SENSAT.	6.3	4.3	2.66 **
OBSTETRIC HISTORY	0.3	0.3	0.30
LABOUR TIME	560.2	494.4	0.81
2ND STAGE TIME	41.8	48.9	0.69

3RD STAGE TIME	5.9	5.9	0.05
BABY APGAR	7.8	7.7	0.24
WEIGHT	3429	3266	0.91
POST PARTUM ANXIETY	29.6	32.3	1.08
RECOVERY	14.4	16.9	2.26 *
LABOUR INF: WHY	4.5	1.4	2.77 **
HOW	4.6	1.6	2.76 **
SENSAT.	4.6	1.6	2.59 **
EXPECTATIONS	30.7	30.4	0.21
EXPERIENCES	31.8	31.3	0.62
COMMUNICATIONS	19.7	20.1	0.52
ANTE-NATAL SATISFACT.	10.6	10.8	0.30
OVERALL SATISFACTION	30.3	30.9	0.53
INFORMATION APPRAISAL	13.7	4.5	2.76 **
INTERVENTION SCORE	8.0	7.4	0.60
LABOUR ANXIETY (RETRO)	3.4	4.2	1.84 *
COPING WITH LABOUR	3.9	3.1	2.25 *
WAY THEY SPOKE TO YOU	6.1	6.5	2.06 *

* p<.05 ** p<.01

Breast feeding was encouraged by staff at both hospitals. None of the Spielberger anxiety measures differentiated the mothers. However, when women rated their own anxiety on a 7 point scale about their labour those who breast fed were significantly more anxious. Breast feeding women had significantly higher information scores (t=2.00 p=.050) and their error scores on why procedures were done, how they were carried out and sensation information were all significantly lower. Women who breast fed had significantly higher recovery scores (higher the score, the better the recovery). When looking back at the labour experience, women who were bottle feeding

were significantly more likely to have wanted more information about procedures. These women seemed to have insight into this as when asked to retrospectively appraise their ante-natal information they were significantly less satisfied (inverse scale, higher score denotes less satisfaction). The breast feeding mothers also reported greater satisfaction with the way the staff spoke to them.

Method of feeding, seen as an outcome, correlated with information score, and was related to interactions with staff who seemed to deal differently with women who bottle feed. Lower information was associated with bottle feeding. Anxiety level as measured by the Spielberger did not differentiate the women.

5.3.14. RECOVERY

8 recovery aspects were measured post natally which moved from an disability to a position of ability over the course of time. Furthermore, staff on the ward were able to note that such aspects of recovery were 'like a women on her 1st post partum day' or '3 days post partum'. On the ward there were eight major milestones of recovery. Table 5.20 shows the results of a correlation looking at the relation between recovery and other measures. The higher the Recovery score, the greater the recovery.

TABLE 5.19 TABLE OF RESULTS CORRELATING RECOVERY WITH OTHER MEASURES USING PEARSON CORRELATION.

CORRELATE WITH RECOVERY	R	P
ANTE-NATAL STAIT ANXIETY	.06	.28 NS

ANTE-NATAL TRAIT ANXIETY	.34	.001	*
INFORMATION SCORE	.01	.48	NS
ERROR SCORES : WHY NEEDED	.03	.39	NS
HOW DONE	.02	.42	NS
SENSATION	.01	.48	NS
LABOUR ANXIETY (SELF RATING)	-.15	.08	TREND
ANXIETY ABOUT BABY (SELF RATING)	-.16	.07	TREND
ANXIETY ABOUT COPING (SELF RATING)	-.23	.01	*
COGNITIVE COPING	.06	.29	NS
OBSTETRIC HISTORY	.20	.03	*
LABOUR TIME 1ST STAGE	.17	.07	TREND
2ND STAGE	.21	.04	*
3RD STAGE	.17	.07	TREND
BABY APGAR	-.34	.001	*
WEIGHT	.02	.42	NS
COPED WITH LABOUR (SELF RATING RETRO)	.23	.01	*
ANXIETY DURING LABOUR (")	.09	.21	NS
SATISFACTION	.55	.0001	*

Ante-natal Trait anxiety correlated significantly with increased recovery (r=.34 p=.001), whereas current state did not. This could be in line with Janis' model where moderate anxiety affected outcome. Although such subjects may have had higher trait anxiety, state anxiety was not elevated. Women with lower self ratings of anxiety about labour, the baby and coping had higher recovery scores (r=.15 p =.08; r=.16 p=.06 and r=.23 p=.01 respectively).

None of the information scores correlated significantly with

recovery. Satisfaction and recovery were related (r=.55 p=.0001). There was a negative correlation with baby APGAR. It seems that recovery is slower where a baby is less well at birth. Self appraisal of coping with labour and satisfaction correlated significantly with recovery. Longer first and third stages of labour tended to correlate with increased recovery and longer second stage correlated significantly. Most of these correlations are relatively small and account for small amounts of variance. Correlations cannot indicate causation, but they can give leads to areas for further examination.

5.3.15. COGNITIVE COPING

Hulack (1979) operationalised cognitive coping as the time spent thinking about the impending stressor. Women were questioned during their ante-natal interview about the amount of time they spent thinking about being in labour and the baby being born to load on Janis' concept of "work of worry" to see if time spent thinking about labour/delivery was predictive of outcome. Table 5.20 below shows the percentage of women within each cognitive coping category.

TABLE 5.20 COGNITIVE COPING

TIME SPENT THINKING ABOUT FORTHCOMING LABOUR	WOMEN (N=86) %	N
Virtually all the time	11.6%	10
A great deal	32.6%	28
Fairly Often	34.9%	30
Occasionaly	18.6%	16
Not at all	2.3%	2

Thinking about labour does seem to occupy the thoughts of many women. Only 2 women (2.3%) said they did not think "at all" about labour. Table 5.21 below correlates cognitive coping level with other variables.

TABLE 5.21 CORRELATIONS BETWEEN COGNITIVE COPING STYLE AND OTHER VARIABLES (PEARSON PRODUCT MOMENT)

CORRELATE	R n=86	CORRELATE	R n=86
STATE ANXIETY (A-N)	-.19 *	RECOVERY	.22 *
TRAIT ANXIETY (A-N)	-.06	ANXIETY (P-N)	.04
ANXIETY ABOUT LABOUR	.09		
ANXIETY ABOUT THE BABY	.10		
ANXIETY ABOUT COPING	.19 *	RATING OF:-	

INFORMATION SCORE	-.02		
WHY PROC. NEEDED	-.00	ADMISSION	.05
HOW PROC. DONE	.04	CARE POST PART.	.07
SENSATION OF PROCEDURE	-.06	BIRTH PP	.19 *
HISTORY	-.06	WAY SPOKEN TO	.12
TIME 1ST STAGE	-.11	PP WARD CARE	.07
TIME 2ND STAGE	-.24 *	COMMUNICATION	.05
TIME 3RD STAGE	.08	ANXIETY IN LAB	-.08
RATING OF:-		COPING LABOUR	-.02
BOOKING CLINIC	-.07	EXPLANATIONS	.04
HOSPITAL AN CARE	-.10	USEFUL HOSP CLS	.38 *
GP CARE	-.02	USEFUL OTHER "	.20 *
EXPECTATIONS:		USEFUL BOOKS	.22 *
ADMISSION	.01	USEFUL PEERS	.01
CARE IN LABOUR	-.06		
CARE AFTER BABY BORN	-.08		
CARE ON WARD	.24 **	OBSTETRIC HIST	.06
CARE DURING THE BIRTH	.10	BABY APGAR	-.03

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* P<.05 ** P<.01

The higher the state anxiety score the more subjects thought about their forthcoming labour. This was not significant for trait anxiety nor for anxiety about labour or the baby. Post partum state anxiety did not correlate significantly. Women with specific anxieties about coping with labour spent less time thinking about labour.

None of the information measures correlated significantly with cognitive coping, nor did obstetric history. Longer second stages

of labour correlated with increased thinking about labour beforehand. It may be that increased thinking, anxiety and concerns about coping directed analgesia choice. Epidural analgesia is known to interact with prolonged second stage time. None of the ratings of carecorrelated significntly. Expectations of care on the ward correlated with decreased thinking about labour. It may be that women who deny or spend little time thinking about labour tend to rely more on medical care. On the other hand women who anticipate a good hospital experience may not feel the need to worry about the labour/delivery. These may be individuals whose health beliefs allow them to abdicate control to the medical staff - and hence they have a higher expectation of standard of care. This would be in line with the finding that ratings after the birth of care during the birth correlated with decreased cognitive preparation. Women may give over care to the staff or if they have not spent a great deal of time thinking about their labour it may be that they are happy with the care package given to them and thus rate the care more highly. Indeed, such a style is recommended in much of the literature (e.g. Bourne 1978) where women are advised "not to worry, but leave it in the hands of the professionals."

The more women thought about their labour the less happy they were about hospital or other ante-natal classes or books they had read. Conversely the less women thought about labour the higher they rated such information sources. Peer information sources were unrelated to cognitive preparedness.

It seemed that there was a link between cognitive coping and ante-natal anxiety. It could be that cognitive coping was simply another expression of ante natal anxiety rather than a separate

entity as set out by Janis. Different coping styles certainly did not differentiate women on their knowledge scores. However, it is of interest that women with higher cognitive preparations tended to express a greater desire for information regarding how procedures were done during labour. There were no links between coping style and recovery. How did the individuals in different coping style groups fare? Table 6.23 below sets out the findings. The groups were collapsed for this analysis. Individuals who scored 1 (thinking all the time) were compared with those scoring 2 or 3 (most or fairly often) and lastly those scoring occasionally or never.

TABLE 5.22 EXPERIENCES OF WOMEN WITH DIFFERENT COPING STYLES

EXPERIENCE	% WOMEN IN CATEGORY			X2
	ALL THE TIME	GRT DEAL FRLY	OCCAS. OFT	NEVER
	N=10	N=58	N=18	
ATTENDED HOSPITAL CLASSES	40%	66%	72%	3.1
ATTENDED OTHER CLASSES	30%	33%	17%	1.8
NATIONAL CHILDBIRTH TRUST	0%	33%	67%	-
INDUCED	20%	35%	17%	2.7
CASERIAN SECTION	30%	7%	11%	4.8+
SPECIAL CARE BABY UNIT	38%	16%	15%	2.2
ANALGESIA ON THE WARD	60%	63%	90%	2.7
EPIDURAL IN LABOUR	25%	38%	47%	1.1
PETHIDINE IN LABOUR	50%	58%	35%	2.8
NO ANALGESIA (ENTONOX)	0%	2%	0%	-
EPISIOTOMY	70%	90%	77%	3.9
FORCEPS DELIVERY	20%	25%	11%	1.6
BREAST FED THEIR BABY	60%	77%	78%	1.4
LIKE A LOT MORE INFO	50%	36%	28%	-

+ $p<.10$

- chi square not calculated (cells too small)

Women who thought of their labour constantly tended to have more caserian sections. It may be that such women had poor obstetric progress which they were aware of and were aware of the possibility

of a section. Such factors would account for increased anxiety and indeed increased cognitive rehearsal. On the other hand it may be that women who thought of their labours constantly and were highly anxious needed greater intervention. None of these women went to the National Childbirth trust. 67% of the women in the group who thought about labour least attended the NCT. It may be that the effect of the NCT was to reduce anxiety and provide reassurance and hence free women from worry about the forthcoming labour. The only woman to have an analgesia free labour was in the medium group.

90% of the women in the low group were given analgesia on the ward. It may be that such women hold different health beliefs and may abdicate control to the professional more readily. As such they would not think about their labour often as they would be reassured by the belief that the medical staff would take over control and these may be reflected in the high numbers who had analgesia on the post partum wards.

5.4 DISCUSSION

5.4.1. ANXIETY

No curvilinear relationship as predicted by Janis' model was found. In this study there was a significant relationship between pre-labour anxiety and post-labour emotional state (anxiety). This was a linear relationship. Ante-natal state Anxiety correlated significantly with cognitive coping whereas ante-natal trait anxiety correlated significantly with recovery. Psychological measures did vary with anxiety. There were significant linear effects for

pre-labour anxiety, appraisal of care, ante-natal satisfaction and overall satisfaction. The higher anxiety groups were least satisfied. Information score, measured by the a knowledge test, did not differ in terms of absolute level or error scores with regard to how procedures were carried out, why they were needed and a knowledge of sensations. Higher anxiety level correlated with decreased rating of usefulness of ante-natal classes. Higher anxiety correlated with lowered satisfaction with initial booking clinic. Cognitive coping, measured as time spent thinking about forthcoming labour tended to show a curvilinear relationship with ante-natal anxiety. Here the medium anxiety group spent the least time thinking about the forthcoming labour. The high anxiety group had significantly higher incidence of obstetric history (terminations or previous miscarriages).

High medium and lower anxiety women did not differ when measured on anxiety measures with regard to their baby and coping. It seems that this is not an overall 'highly anxious' group, but a group with a specific anxieties mostly about their forthcoming labour. Janis' proposition of different information levels as a function of anxiety is also not confirmed in this study. However, there does seem to be a difference with what women do with their information, and this may have implications for the course of their experience. Given the same information levels, the medium anxiety group need to think less about the forthcoming labour. Although they do not differ in terms of their expectations.

The relationships between anxiety and outcome was invariably of a linear nature. The only two measures that tended to a quadratic form were cognitive coping and the error score on why procedures are

carried out.

5.4.2. ANXIETY REACTIONS WITHIN A CONTEXT

The context effect of medical care and anxiety expression was of most note. Feelings and expressions of anxiety do not occur in a vacuum. They occur within a medical setting and reactions by the medical staff form a necessary component in any anxiety theory. Johnston (1982) looked at the communication of worries between patients and fellow patient and found the latter group superior at picking up worries than nurses. An emerging picture from the literature is demanding the inclusion of the impact of anxieties on the medical situation. Such reactions need to be included in anxiety models and their different effects monitored. In this study high and low anxiety groups do not differ greatly in terms of their general presentation. They have similar information levels, they attend classes and appraise their information similarly. However, they do not appraise their care in the same way, nor their satisfaction.

Furthermore where anxiety exists it may not be irrational. There is a significant relationship with previous obstetric history. It may be that higher anxiety women have suffered a loss before and are duly concerned about their pregnancy. They also find more obstacles in approaching their doctor for information. Given that they do have similar information (as judged from the information test score) it may be that it is reassurance rather than information they seek. Thus information seeking may serve a variety of purposes.(This point will be taken up and expanded as the next study). Information may be used as a tool for coping. This appears to be the main focus

of ante-natal classes where women are taught psychoprophylaxis and given factual information about their pregnancy and forthcoming delivery. Yet information itself may help coping in a variety of ways. Janis discusses the role of knowledge of unpleasant procedures. He posutaled that such knowledge would improve outcome. It may well be that different anxiety levels require same amounts of information, but differences in content. Simply giving standard information packages may not suffice. It would also be wrong to presume that high anxiety patients are always anxious, no matter what. Indeed, these results show a significant difference between the groups with regard to labour anxiety, but not when questioned about coping with the baby and anxiety in relation to the baby itself.

5.4.3. COGNITIVE COPING

Cognitive coping was measured by time spent thinking about labour/delivery. Anxiety (Spielberger State measured ante-natally) correlated significantly with time spent thinking about labour. The highly anxious group spent the most time, and the low anxiety group spent the next amount of time and the medium anxiety group spent the least time worrying about the forthcoming labour. Although this does not seem to have a quadratic relation with outcome measures, it may still be of importance in noting what needs women have in the ante-natal preparatory phase. The next phase would be to understand the nature of the thoughts which may help explain what function is served by thinking about a forthcoming event.

5.4.4. THE COURSE OF ANXIETY

If a certain amount of anxiety is productive then it is of interest to keep track on the course of anxiety and to note the implications of anxiety change. From this data about two thirds of patients show a decrease in anxiety after delivery, however one third increase their anxiety. This increased group have significantly higher recovery scores. It may well be that anxiety and corresponding preparatory worry accompanies recovery steps in this post partum phase. Or it may be that these women are facing up to more issues (i.e. being active) however these bring with them, by their very nature, a certain amount of anxiety. Another explanation may relate to the initial anxiety group. Although these two groups (increased or decreased anxiety) do not differ in their ante-natal trait anxiety scores, they do differ in the ante-natal state anxiety scores ($t=3.04$, $p=.003$). Those whose anxiety decreased had significantly higher initial anxiety than those whose anxiety scores increased. This suggests that a certain amount of anxiety is beneficial for coping and recovery. The decreased group rated their care on the post partum ward significantly higher than the increased group. It may be that recovery demands independance and this is in conflict with traditional nursing roles. A passive patient who accepts help from the nurses will perhaps rate such help higher but will delay her own recovery. A patient who does not accept such assistance, or who is in a situation where such assistance is not offered, experiences greater anxiety, but recovers quicker. It seems that at this time information is useful. The increased anxiety group have significantly higher ratings of the information they received, yet their knowledge scores do not differ.

Information and its usefulness appears to be a personal and

situational specific event.

5.4.5. SATISFACTION

Satisfaction does not rely on recovery. Prior expectations emerge as an important factor. People with higher satisfaction scores had higher expectations and recorded rated their experiences higher. It may be that certain patients are always more satisfied, expect higher standards, and indeed perceive that they have recieved them. It may be that such a group do receive better care as the staff react to this group's positive approach. A more sensitive measure of satisfaction could incorporate the element of expectations and theextent to which they aremetorfrustrated.When this was done, there were no differences except for obstetric history. Those with a previous experience of miscarriage, stillbirth or termination were more likely to be let down. It could be that previous experience of care during the loss of a baby did not match current care or that previous loss raised their expectation of what the hospital could offer them.

5.4.6. INFORMATION

13% of the sample did not attend any form of classes. The majority of women were willing and eager to attend classes to be informed. The content of such classes needs to be scrutinized. Reasons for attending differed. Some went to acquire a coping skill (breathing during labour), others went mainly for information. This group was divided into those who wanted to be taught and those who wanted to have their questions answered. Virtually all patients read

pamphlets given to them by the hospital (98.9%). This was the single most effective information channel with the majority audience. Yet such pamphlets are mass produced booklets, filled with commercial advertising, and gloss over many aspects of information by referring readers to the ever helpful 'your midwife'. Given the choice, the majority of women would want to turn to doctors for information (total of 59.1%) or midwife (13.6%). Such information sources were often not ideal as many women found it very difficult to approach their doctor. Communication channels were not opened during the brief ante-natal checks. Women listed a series of reasons why this was so. Over a quarter of the patients stated that questions came to them only when they were already herded out of the room. This seems to be an area which could be amenable to some change. Women were reluctant to complain, and generally appraised information they did get, positively.

Passive or active attitudes towards information were compared. Knowledge scores did not differ significantly, indicating that approach did not seem to alter the amount of information and knowledge subjects could acquire. Their post partum anxiety did not differ either. Experiences differed markedly. Passive patients rated care and communications variables higher. Active patients rated their labour, expectations being met, overall experiences, communications, satisfaction and care on the ward lower. This could not be accounted for by different expectations as these two groups did not differ significantly when questioned ante-natally about their expectations. It may be that active patients are more demanding and are thus less likely to have all their needs met, or that staff respond better to passive patients. Here again the response variables of the women cannot be viewed in isolation and

their context and impact on the caregiving staff must be taken into account in an explanation involving medical care and treatment.

Given the above, recovery and satisfaction must also be viewed in terms of the interaction with the medical context in which it occurs. By looking at labour intervention one can see that there are significant correlations with recovery. Anxiety did not correlate significantly with intervention. It thus seems that intervention is not a reaction to anxiety, but based more on medical factors. These do, however, have their consequences.

5.4.7 BIRTH EXPERIENCE

Longer labour was associated with greater intervention, and increased baby APGAR. As with all correlations it is unclear whether long labours which fail to progress necessitate intervention or whether labours are not allowed to go on beyond a certain arbitrary time when intervention is imposed as of routine (see for e.g. O Driscoll 1979 who will not allow a labour to continue for more than 12 hours). Problems with the baby may necessitate intervention. Lowered APGAR scores may be reflecting such problems or be a consequence of intervention.

Recovery, surprisingly, increased with increased intervention. It may be that higher intervention necessitates greater post partum input by nurses and there are subsequent gains in terms of recovery. However, no corresponding increase in care rating is noted. It may be that one of the benefits of high technology is to overcome post partum difficulties quicker. However, along with that is the result

that increased intervention correlated significantly with an increased desire for information both on why such procedures were needed and how they would be done. This was clearly a need to be met in the labour ward rather than during ante-natal information gathering, as there was no significnt correlation between retrospective information rating and intervention level. Ante-natal classes and literature can meet a general need (information score does not differ), but when specific personalised needs emerge these must be viewed in addition to the background knowledge. Information may have different levels of use. In the early stages knowledge may be used to prepare and for cognitive coping but during labour information itself can have different roles such as reassurance, stress reducer or simply enhance communications by providing a vehicle for interaction.

Without full monitoring of content of ante-natal education, conclusions must be tentative. A future study could examine the content of ante-natal classes and relate this to outcome.

5.4.8. CONCLUSION

Ante-natal anxiety in this study related in a linear way to post partum measures. Anxiety level was important within the context of the medical interaction and may have determined staff interactions. The role of information needs clearer understanding. Information may play a different role for providing explanations or reassurance. Previous obstetric complications related to anxiety and expectations and thus the role of reassurance cannot be overlooked. In the next study ante-natal anxiety and information will be studied more systematically.

SUMMARY

A group of 88 women were monitored before and after delivery in an urban (A) and a district general (B) hospital. Anxiety, communications, expectations, recovery and labour experience were monitored. Women from hospital A were generally more anxious. Comparisons of low, medium and high anxiety women revealed essentially linear rather than quadratic relations with outcome. Low anxiety subjects rated satisfaction higher. High anxiety subjects accounted more obstacles in approaching their doctor for information and had higher previous obstetric complications. None of the low anxiety group received post partum analgesia. For 60 subjects anxiety decreased after labour. Those with increased anxiety had higher recovery scores,lower ante-natal anxiety and rated post partum care lower. Satisfaction correlated with recovery, information score, inversely with ante-natal and post partum anxiety, and with baby APGAR. Women whose expectations were not met tended to have a higher previous obstetric history. Women with passive as compared to active information seeking stratagies rated care and communications higher. Information and anxiety in context reveal a fuller understanding of the process of such factors in the ongoing experience.

CHAPTER 6 - THE IMPACT OF INFORMATION AND FEEDBACK ON ANXIETY AND SATISFACTION IN ANTE-NATAL CONSULTATIONS

This study examined the effects of an intervention where groups of pregnant mothers attending ante-natal clinics were randomly ascribed to received either explanatory information about routine ante-natal screening or such information together with feedback. A control group received no intervention. Post-consultation anxiety, knowledge and satisfaction was measured.

6.1 INTRODUCTION

In chapter 3 women expressed a desire for information irrespective of class or parity. 98% of the women in the sample stated that the would like to be given test results together with explanations. An analysis of the responses to questions about the routine ante-natal tests (blood pressure, blood tests, urine sample tests and routine weighing) revealed low levels of understanding. Doctors did not fully appreciate the extent of such knowledge deficits in their client populations.

6.1.1 ANTE NATAL SCREENING

Ante-natal screening is the tool which purports to monitor the normal progression of the pregnancy. In chapter 5 anxiety and information were examined and it was concluded that the communication of information was not straightforward. Higher anxiety subjects reported more obstacles in approaching their doctor for information despite equal 'knowledge' scores. Information could possibly serve a variety of purposes such as reassurance and a tool for coping. McIntyre (1979) showed that women appreciated communications even if the content was negative. Consumer dissatisfaction with ante-natal services has been the focus of the Short report (1980) which concluded that dissatisfied consumers made inefficient attenders.

The forms of routine screening embarked upon include:-

WEIGHT GAIN MONITORING - Excessive weight gain may point to diabetes; failure to gain weight may indicate a foetus in difficulty.

PHYSICAL MEASURES - such as, baby size, Pelvic measurement

BLOOD TESTS - Blood tests are used to establish maternal immunity against Rubella (German Measles) which is associated with foetal abnormality. Serum alpha pheta protein ismeasured as an indicator of abnormality. Blood grouping is carried out. Haemaglobin levels are checked regularly. Wasserman reactions can check for venereal disease.

BLOOD PRESSURE - is measured regularly for pre-eclampsia - an index itself to eclampsia (a condition of pregnancy which is life threatening to the mother and baby).

SPECIAL TESTS - Ultrasound scanning and amniocentesis are carried out selectively. Scanning gives an in vivo live view of the baby.

6.1.2 EFFECTS OF ANTE NATAL SCREENING

Ante natal anxiety may be raised because of these procedures themselves, as well as the potential problems which such procedures are attempting to investigate. Farrant (1981) has shown how alfapheta screening has reduced anxiety in women who had worries

about possible fetal abnormalities. Yet she further showed that this was done at some cost. In the screening process many mothers were picked up with raised alfapheta levels who had no previous worries. From this group there were a high proportion of false positives. These women were unduly anxious in spite of the fact that the ultimate test outcome was negative. Thus the very procedures which are used to detect abnormalities can in themselves and in the way they are carried out cause anxiety. The final outcome of such investigative procedures may be a source of anxiety relief, but one ought to know at what cost. Reading (1981) similarly looked at anxiety in relation to ultrasound scanning procedures.

6.1.3 ANTE-NATAL ANXIETY

Within the ante-natal literature there are few studies looking at both anxiety and information (Reading 1981, Kumar and Robson 1978). During pregnancy the mother and family need to accustom themselves to the new arrival. Pregnancy has been referred to as a time of anxiety (Reed 1944). However, clinical anxiety is defined as an irrational or inappropriate fear. Ante-natal anxiety has been examined as a predictor of post partum outcome. Zukerman et al (1963) reported that ante-natal anxiety was correlated significantly with the amount of analgesia used during labour. Davids et al (1961) found that women who later had childbirth complictions had shown higher ante-natal anxiety scores than those who did not have similar complications. These findings may be confounded as adverse factors may cause the anxiety, and these factors, rather than the anxiety itself,may account for adverse outcome. The majority of studies have looked at ante-natal anxiety in terms of post-natal

outcome. This link has led workers to investigate the uptake and appraisal of anxiety reducing techniques such as relaxation and mothercraft classes. Yet it would also seem of interest to look at the process of anxiety levels during the ante-natal consultations and explore the implications of such anxiety for ante-natal progress of itself.

Reading (1982) proposes that a common cause of high anxiety may be concern over the "viability and health of the fetus". This proposal is also seen in Kumar and Robson's study (1978). They looked at anxiety levels in the first trimester of pregnancy. High anxiety at this stage wasassociated with prior elective terminations. Based on this evidence they conclude that anxiety levels may reflect concern over the viability of the current pregnancy. In a second study they found that anxiety was high in the first trimester of pregnancy but normalised towards the end of the 9 month period. This finding would also support the contention that anxiety was related to concern over the viability of a pregnancy. By the end of the pregnancy the viability of the fetus would be obvious by its very existence. This may account for the reduction in anxiety at this time.

Insight is needed into what factors contribute to raised anxiety if and when it exists. The absence of anxiety must not be overlooked and knowledge of factors associated with this may be equally helpful in understanding the role and course of ante-natal anxiety. Information and its link with anxiety needs to be further explored.

6.1.4 THE ROLE OF INFORMATION IN THE COURSE OF ANXIETY

Most studies have been carried out on other medical populations. Findings may well be applicable in the pregnancy area. These studies generally describe the provision of information in different forms and analyse the impact this has both in terms of anxiety relief and other outcomes. These will be described and the relevent findings from earlier chapters will be looked at in order to determine the rationale for the following study.

Ley (1977) has looked at communications in relation to anxiety relief. According to his cognitive hypothesis messages contained within a communication must be 'understood and remembered' if they are to be effective. These are necessary but not sufficient conditions for satisfaction.

The provision of information and its subsequent effects has been looked at in a number of ways. The main outcome measures which have been monitored are anxiety (Putt 1970, Lindeman & Stetzer1973, Schmitt and Wooldridge 1973, Reading 1982) pain (Egbert et. al 1964, Johnson 1965), analgesia intake (Healey 1968, Andred 1970, Chapman 1976, Egbert et al 1964, Schmitt and Wooldridge 1973). Difficulties with interpretation with many of these studies arise as the workers use 'information' globally and do not attempt to explain or control for the content of the information. It is not clear what it is about the information that effects outcome. Johnson (1973) was one of the few workers who attempted to look systematically at information content. She found that information about sensations was more effective than information explaining procedures. Ley (1977) describes how differently 'information has been used'. It

has sometimes been used to explain how to use apparatus, carry out exercises, to provide reassurance or quasi psychotherapy (Chapman 1969) and commentary (Reading 1982). Ley (1977) has argued that components of different information packages need to be clarified. Pure information must not be contaminated with instructions for exercise or equipment use. Subsequent outcome measuring of duration of stay or analgesic intake may well be reduced due to the beneficial effects of carrying out the exercises or using the equipment rather than the emotional well being resulting from being 'informed'. Rather than dismiss this as 'contamination' as Ley does, it would be interesting to determine different levels of information and the way in which they contribute to improved outcome.

6.1.5 INFORMATION FACTORS EMERGING FROM PREVIOUS CHAPTERS

In chapter 3 knowledge levels together with misunderstandings were appraised. Knoweldge was often found to be low with corresponding high levels of misunderstandings. Contrary to doctors' perceptions, there were no significant effects on knowledge scores due to past experience. Education and social class did seem to contribute significantly to such scores. Even though social class was not a factor in determining desire for information it did seem to be a factor in the success with which this desire was fulfilled. Cartwright (1979) has found a similar trend. Middle class women were more likely to receive information from doctors. Ley and Spelman (1967) maintain that three factors contribute to a patient failing to understand information. Patients are often given material which is too difficult to understand. They also often lack technical medical knowledge. Furthermore they may have active

misconceptions which 'militate against proper understanding'. Their cognitive hypothesis does not include factors such as emotional state, but it has been recorded in other cognitive literature that variables as minimal as selective attention may affect recall. If anxiety is apparent in a situation then it could play a part in recall, understanding and interpretation of information.

In chapter 3 the factors suggested by Ley and Spelman were found to exist amongst pregnant women. A further analysis of the data was carried out looking specificaly at the level of knowledge in relation to routine ante-natal screening. Many women failed to mention some of the major reasons why blood tests were carried out. They were unsure of why blood pressure needed constant monitoring and many were unrealistic about the diagnostic and prognostic value of urine sample tests. Women unanimously wanted results to such tests and a high proportion (96%) wanted explanations of such results.

Thus elements of Ley's cognitive theory seem apparent in the pregnancy area. However the theory does not extend far enough. Two major gaps are apparent. Ley fails to take into account either the context or interaction effects of the situation and presents communication in a rather static way. He also omits the emotional loading which may be relevant in other areas of medicine, but are certainly documented in the childbirth area. Kumar and Robson's ideas regarding anxiety linked to concerns over the viability of the pregnancy may be highly relevant. Such factors could contribute to anxiety and satisfaction in the ante-natal period. Whether the distribution is curvilinear (Janis 1957) or linear (Johnson 1971) could be tested out as well as the links between anxiety level and

information of different forms.

In chapter 3 women often had poor understanding of the tests or misunderstood why they were carried out. This was not accurately perceived by doctors. Ley (1977) proposed that misunderstandings could contribute to dissatisfaction. Janis (1958, 1971) stated that information gathering was a tool for cognitive coping which in turn related to anxiety level and subsequent coping. There are no studies which directly relate reduction in misunderstandings with reduction in anxiety.

A methodological problem in studies examining the effects of information on outcome is the lack of control of the feedback (and hence possible reassurance) quality of such information. Studies utilising 'information' as a controlled variable have confounded explanations with instructions (e.g. Egbert 19161, Healey 1968), and have not differentiated between gaining knowledge, reassurance or learning skills.

6.1.6 INFORMATION AND FEEDBACK

Information (knowledge) gives understanding and reduces uncertainty. Information (reassurance) is important for its content. Information can play many roles. It is unclear whether information as a tool in anxiety reduction works because it allows for understanding or whether it simply allows the subject to know that some feared state of affairs is not the case. The extent to

which information could play different roles by controlling for information as 'knowledge' and information as 'reassuring feedback' needs systematic investigation.

The present study was set up to investigate the relation between anxiety and information in ante-natal screening by experimentally controlling for information content and measuring the impact on satisfaction, anxiety and knowledge. Information itself was divided into explanatory and feedback components. The former may provide knowledge and the latter reassurance. Women in this study were all from low risk categories. This study ws set up to vary the information women received and to chart resultant anxiety and satisfaction levels. Women were given explanatory information on the routine tests in a controlled way. Two forms of information were used. The first was aimed at providing explanatory information and the other contained an additional element of feedback in order to allow for reassurance and understanding.

It was hypothesised that there would be a relationship between anxiety and information, that information which contained the element of reassurance would be most effective and that such provision would have an impact on doctor/patient satisfaction.

6.2. METHOD

6.2. 1 SUBJECTS

55 pregnant women participated in the study. The mean age was 26.1 years and mean parity was 1.82. Table 6.1 below provides data on the subjects. All women attending these clinics were approached except

for those who were found to have developed any obstetric complications (as determined by the doctor) or non-fluent English speakers who would be unable to complete the questionnaires or understand the information leaflets. One woman declined to participate in the study and another woman did not complete her interview due to social problems (spouse had been arrested and imprisoned the previous night and she was being denied access. Neither doctor nor midwife had discussed state).

TABLE 6.1 DESCRIPTION OF SAMPLE BY GROUPS

VARIABLE	BASE N=17	INFO N=17	I+F N=21	S.S	M.S	F	P	
AGE	25.1	26.2	27.1	36.2	18	.8	.5	ns
(S.D.)	(5.7)	(4.1)	(4.7)					
PARITY	1.82	1.90	1.71			F=.248	P=.78	ns

The General Practioner ante-natal clinics were all part of group practices in mixed social class areas. All women were at least entering their second trimester of pregnancy.

6.2.2 PROCEDURE

All women were defined as obstetrically low risk. The district under study provided for Hospital Consultant care for high risk mothers and General practitioner care for low risk mothers. General Practitioner ante natal clinics were thus by definition obstetrically low risk. Mothers were gathered from those

attending three different General Practioners monitored for three consecutive weeks each.

All women attending a given clinic on a given day were treated in the same way acording to a group allocation to prevent subjects within one treatment group becoming aware of different treatments or to control for contamination of treatments where someone may leave a leaflet on a chair or read information over another's shoulder. If such an individual was in the no-leaflet condition experimental control would have been lost.

Normally women arrived for their check up and reported to the Receptionist. All three practices had waiting areas where women then waited until their turn for examination arrived. They would then proceed to the Consulting room to see the doctor. The first stage was weighing. Here women were placed on a scale and their weight was recorded. Their urine sample (which they had been instructed to bring with them) was taken and tested. The test is a simple insertion of an indicator stick which changes colour. The medical examination would ensue with blood pressure reading and an abdominal examination. Although vaginal examinations are not routine they may on occasion be carried out. As a stipulation of the intervention, no women received an internal vaginal examination during the experimental period as it may possibly contribute to anxiety levels not controlled for. This concluded the examination. Examinations took between five and ten minutes.

For this study procedure was altered slightly. The G.P. excluded all women whose test results on that day had been in any way abnormal from inclusion in the study. They also excluded any women

who had suddenly developed obstetric problems which would indicate a change to high risk category. In the baseline condition women would conclude their consultation as usual. In the two experimental conditions women were given the explanatory leaflet by the doctor at the end of the consultation. The sheet was open (not folded) and their attention was drawn to it. In the information plus feedback condition the doctor completed the questionnaire in the presence of the woman and then handed it to her.

After women had gathered their belongings they were usually seen to the door by the doctor. At this point he mentioned the study on pregnancy and asked women if they were willing to paticipate in a confidential and anonymous interview (linked to the University and not part of the surgery). Doctors marked on their clinic list all women who had been so invited. At the end of clinic a check was made between the number who had proceeded to the psychology interview and the number who had been invited to do so to account for refusal rate. Women were seated outside the research room and waited for five minutes. This was intended to allow time for reading the leaflet and also to ensure that the exiting woman did not come into contact with the woman about to enter the doctor's room.

The women were then requested to participate in the research interview. They were told that participation was voluntary, confidential and anonymous. They were told that they would be requested to participate in a study looking at attitudes and feelings about their ante-natal care.

6.2.3 TASK

This study was designed to look at the effects of feedback and information about routine ante natal screening tests on post consultation anxiety levels of pregnant women toegher with satisfaction and knowledge levels. Information can be seen as

a) explanatory information and

b) explantions plus feedback containing individual results and comments.

This design was intended to assess whether increased satisfaction and decreased anxiety were related to increased understanding or individual feedback (or both). Subjects were divided into three groups. The first group (I plus F) received explanatory information of three routine screening tests together with individual feedback. The second group (I only) recieved only explanatory information. The third group provided a baseline measure for control purposes. Women in this last group received no experimental intervention. Women wererandomly allocated to three conditions:-

INFORMATION PLUS FEEDBACK (I+F) - This group received the full consultation and then were given a written leaflet giving them information explaining the three routine tests they had just undergone. Urine, Blood Pressure and Weighing were included as the three standard procedures carried out at all ante natal visits. Furthermore women in this group were given feedback on their individual test results in hand written form by the doctor. An example of the form can be seen in Appendix 6. Women were invited to read the leaflet.

INFORMATION ONLY GROUP - This group received information giving explanations about the standard procedures in exactly the same way as the previous group from the doctor. However, their standard leaflets did not have the added sentence giving individual feedback. An example of the form can be seen in Appendix 6. Women were invited to read the leaflet.

BASELINE GROUP - This group experienced their routine visit and were given no leaflets at all. The provided a control condition.

After the consultation and experimental intervention (as and when appropriate) women were informed that a researcher was present at the clinic and would like to interview them. They were given the option to wait and see the researcher or leave. One woman declined to participate in the study. Women were seated outside the research room and waited for five minutes to allow time for reading the leaflet and also to ensure that the exiting woman did not come into contact with the woman about to enter the doctor's room.

The women were then requested to participate in the research interview, looking at attitudes and feelings about their ante-natal care. Women were asked to complete two questionnaires. All women completed all quetsionnaires.

QUESTIONNAIRE 1 - Women were asked to complete the Current State form of the Spielberger State Anxiety Inventory (Spielberger et al 1970). See appendix 6

QUESTIONNAIRE 2 - Women were asked to rate 8 areas of satisfaction on a seven point scale. They were then asked to state

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whether they recalled the result of the weight, urine and blood pressure tests and were furthermore asked to record such results together with appraisals of implications. See appendix 6 for a copy of this questionnaire.

LEAFLET

The standard leaflet used in the experimental groups was constructed to provide information on Urine, Blood Pressure and Weighing tests (see appendix). The information was controlled for readability Ease according to the Flesh Formula. This formula attempts to relate the length of words and sentences in its calculation of readability ease. It further standardises the readability score against the I.Q. needed for readability at that score.

The Flesh Formula applied to this leaflet showed that 86% of the population should be able to read and understand it. It was deemed necessary to include the actual medical terms in the leaflet. Such words were often lengthy. They may have brought the readability score down. However according to Ley the understanding of technical medical terms is necessary. Thus no lay substitute words were used which may have even further improved the readability score.

A second paragraph was included in the leaflet for the Feedback and Information groups (see Appendix 6). This section provided for individual feedback plus a value judgement (i.e. your result is 'fine'). The women were given their test results together with assessment in hand written form on the leaflet. The wording was written individually by the doctors to ensure that the information appeared individualised. It was given in a standardised form and

only varied with individual test figures. This paragraph was simply ommitted in the Information only group.

A check was carried out at the end of the research interview to ensure that all women who had received leaflets had read them as in the pilot study one doctor folded the form and most women placed these in their hospital envelope (which they carry with them to the hospital at the end of their pregnancy) without glancing at it. When questioned they stated that they thought this was 'confidential information' not for their eyes. Doctors thus invited women to read the leaflet, time was given for them to do so. Checks were carried out after the reseasrch interview. It was done at the end so as not to draw women's attention to the leaflet prior to data gathering. In the event all women stated that they had read their leaflet and none needed to be excluded from the study.

DOCTORS INSTRUCTIONS

The doctors in all three surgeries were given standard information sheets prior to each clinic defined as Information only or Information plus feedback. The doctors were requested to use their clinical judgement to exclude all women whose obstetric condition on the day of the visit was not within the normal range. Where required they completed questionnaires and handed them out. They used a standard introduction to the research when asking women to participate.

Whenever the doctor invited women to participate in the research he placed the file to one side for subsequent checking of participation and data accuracy. Doctors were not given access to individual questionnaire results and were not informed which women participated.

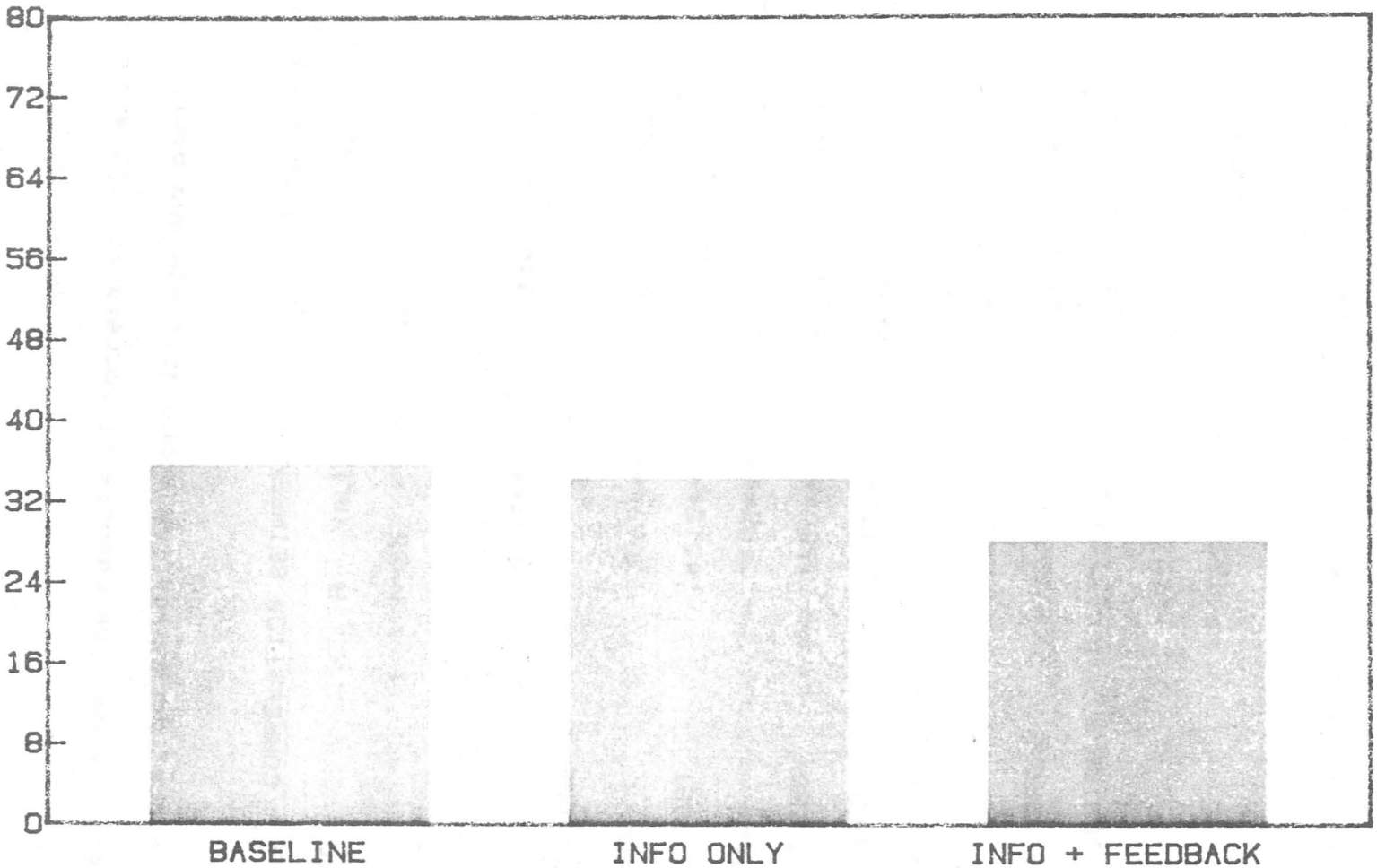
6.3. RESULTS

6.3.1. STATE ANXIETY

The 55 women scored between 21 and 48 on the Spielberger Current State Anxiety Inventory. The mean score was 32.1 (SD 6.474). There was a significant main effect on State Anxiety scores due to experimental conditions. F ratio = 9.97 p=.0002 DF (2,52) Figure 7.2 below sets out the findings.

Tukey tests show that I+F differs significantly from each of the other two groups. There were no significant differences between the information only and baseline groups on this measure. The provision of explanatory information on its own does not significantly affect anxiety. When this explanation is complemented by a short statement which allows for personal interpretation and incorporates feedback on an individual level it does have a significant impact on post consultation anxiety level. The I+F were significantly less anxious than the others.

6.2 COMPARISON OF ANXEITY BY GROUP



F=9.9 P=.0002

Table 6.3 shows the results of correlation (Spearman rho) between anxiety score, communication appraisal, age and parity.

TABLE 6.3 CORRELATION BETWEEN ANXIETY AND OTHER VARIABLES.

CORRELATE	R (ALL) N=55	BASE N=17	I ONLY N=17	I+F N=21
CARE	-.4197**	-.74**	-.48**	-.21
COMMUNICATIONS				
GENERAL	-.3069***	-.67**	-.49**	-.15
URINE TEST	-.4315***	-.47**	-.51**	-.25
B P TEST	-.3488***	-.28	-.42**	-.31+
WEIGHT TEST	-.3656***	-.24	-.68***	-.31+
PROGRESS INFO	-.3137**	-.40*	-.43*	.09
ABILITY/EASE TO ASK QUESTIONS	-.4683***	-.73***	-.64***	-.13
WAY THE DR. SPOKE	-.4385***	-.74***	-.45**	-.10
MORE INFO DESIRE	-.3128**	-.64***	-.63***	.17
AGE	-.1820+	-.21	-.23	-.30+
PARITY	-.1821+	-.15	-.39+	.15

\+ P<.10 * P<.05 ** P<.01 *** P<.001

Overall there were significant correlations between anxiety and all psychological variables measured. The higher the anxiety score, the lower the rating of satisfaction. This was significant for ratings of medical care, all aspects of communications, both generally and

with regard to the three target three tests:- weight, urine and blood pressure. Higher anxiety also correlated with lowered satisfaction with progress information, the subject's appraisal of their ability to ask questions, and satisfaction with the way they were spoken to.

When correlations were calculated for the groups separately raised anxiety correlated significantly with decreased satisfaction for both the baseline and information only groups on most measures except age and parity. There were no significant correlations for the information plus feedback group.

6.3.2. SATISFACTION

There was a significant treatment effect for satisfaction with communication regarding routine tests and information explaining their progress. There were no significant treatment effects for satisfaction with medical care. Moreover, mean satisfaction with care was high.

TABLE 6.4 ANALYSIS OF VARIANCE ON THE EFFECTS OF GROUP FACTORS ON SATISFACTION RATINGS

VARIABLE	MEAN SCORES					F	TUKEY
	BASE	INFO	INFO+				p<.05
	N=17	N=17	N=21	S.S	M.S	(2,52)	
CARE	6.2	6.1	6.6	2.7	1.3	1.3	-
COMMUNICATIONS							
GENERAL	5.9	6.0	6.1	0.4	0.2	0.1	-
URINE TEST	4.2	4.5	6.3	49	24	6.2 **	(I+/B,I)*
BLOOD PRESS	4.5	4.8	6.1	31	16	4.6 **	(I+/B,I)+

WEIGHT TEST	4.7	5.3	6.3	26	13	3.9 *	(I+/B)	~
PROGRESS INFO	5.5	4.5	6.1	22	11	4.0 *	(I+/I)	£
QUESTIONS	5.7	5.8	6.5	9	4	1.9	-	
WAY THEY SPOKE	6.4	6.1	6.7	4	2	2.1	-	

* P>.05 ** P>.01

* + I+F grp differed significantly from both baseline and I only

~ I+F group differed significantly from the baseline group only.

£ I+F group differed significantly from the I only group.

From this table it can be seen that there were no significant differences when rating medical care. Furthermore the mean scores were high - all above 6 on a 7 point scale. This finding is in line with Ley's earlier finding that patients express difficulties with communication in spite of generally high appraisal of care. There were no significant group differences when rating general communications. Specific communications differences did exist according to group factors. There were significant main effects on ratings of communications with regard to all three tests (weight $F=6.9$ $p=.03$; urine $F=6.2$ $p=.004$; and blood pressure $F=4.6$ $p=.01$). The I+F group rated their satisfaction with communications regarding the urine test significantly higher than the I and the baseline groups . There were no significant differences between these two latter groups. Simply providing explanatory information without feedback did not alter satisfaction. This pattern was the same with communictions regarding the blood pressure test. Once again the Information plus Feedback group differed significantly from both the baseline and the Information only groups with these two latter groups not differing significantly in their appraisal. Although the weight test showed a significant difference due to experimental

treatment the information plus feedback group differed significantly from the baseline group only.

When asked to rate satisfaction with progress information, there was a significant treatment effect between I+F group and the I only group. The latter group's mean score was lower than the baseline group. The provision of information without the reassurance quality may have limited use. It may be that understanding the meaning of the tests is of no consequence to women and only when information reassures them of the viability of the pregnancy is it useful. On the other hand information may be welcome but without interpretation it may have been frustrating and women had needs partially met and then were ultimately let down. It is presumptious to think that all women have a need for information without understanding what it is about the information that they desire to know. Explanations in isolation may have a limited impact or may indeed reach a saturation point. Women may want information that is relevant to them and not find other information particularly useful or helpful. Indeed, some evaluation of the leaflet may have proved useful.

6.3.3. CARE AND COMMUNICATIONS

From the previous table it can be seen that satisfaction with care did not differ significntly according to experimental treatment. Satisfaction with medical care was generally high (overall mean of 6.4 sd 1.0 on a 7 point scale). Overall satisfaction with communictions did not differ,but satisfaction with communictions in relation to the individual tests did show a marked group effect. Ley (1977) proposes that one possible explanation for differences in communication satisfaction ratings may be due to personality variables. Some patients may simply be 'complainers' and may show dissatisfaction with all aspects of care. Yet when the analyses available data it seems that this is not upheld.

The following table, 6.4, shows the results of a repeated measures t-test for each group comparing scores when rating care with other variables. Within each group one can look at the differences between ratings of satisfaction with care and general communiction (i.e. not specifically in relation to the 3 tests on which information was controlled). In line with Ley's theory it was hypothesised that satisfaction with communication would be lower than ratings of care.

TABLE 6.4 TABLE OF DILFFERENCES BETWEEN SCORES ON CARE AND OTHER MEASURES (PAIRED T-TEST)

A) COMMUNICATIONS

TABLE 6.4 TABLE OF DIFFERENCES BETWEEN SCORES ON CARE AND OTHER MEASURES (PAIRED T-TEST)

A) COMMUNICATIONS

GROUP	MEAN SCORE		T	P
	COMMUNICATION	CARE		
BASELINE	5.941	6.235	1.43	.08 (TREND)
INFO ONLY	6.000	6.118	0.57	N.S.
INFO + FEEDBK	6.143	6.620	2.91	.005

B) WAY THEY WERE SPOKEN TO

GROUP	MEAN SCORE		T	P
	WAY SPOKEN TO	CARE		
BASELINE	6.4118	6.235	1.38	.09
INFO ONLY	6.059	6.118	0.748	NS
INFO+ FEEDBK	6.714	6.620	0.70	NS

The above tables show that the information and feedback group rates care significantly higher than they rate communicaton. This group rates their communication the highest, almost at ceiling (6.1 on the 7 point scale) but ceiling effects may attenuate any positive treatment effects even on an aspect of care which is already good.

It has been argued that response set may account for ratings on a satisfaction questionnaire. From the above tables it does seem that women do tend to differentiate different aspects of their care. Table 6.5 below sets out further t-test (repeated measures) results

comparing care ratings with the other variables.

TABLE 6.5 COMPARISON OF CARE RATINGS WITH OTHER VARIABKES (PAIR T)

VARIABLE	BASELINE		INFO ONLY		INFO+FEEDBACK	
CARE	6.24		6.12		6.60	
	MEAN	T	MEAN	T	MEAN	T
COMMUNICTIONS						
RE URINE TEST	4.18	3.98**	4.53	3.5**	6.30	0.88
RE B.P. TEST	4.72	3.79**	4.76	2.75*	6.14	1.21
RE WEIGHT TST	4.71	3.05**	5.29	1.91+	6.33	0.83
INFO PROGRESS	5.53	2.40*	4.59	3.79**	6.10	2.06*
QUESTIONS	5.65	1.53	5.77	1.38	6.52	0.70
WAY DR SPOKE	6.41	1.38	6.06	0.32	6.71	0.70

* P< .05 ** P< .01

It is clear from these ratings that women can and do differentiate between different aspects of their care. Similarities are present in the I+F group which may be accounted for by ceiling effect factors where the mean score was 6.6 on the 7 point scale. For this group the provision of information with individual explanations revealed both increased communictions and increased care ratings. The nature of the information could be categorised by the women. Information alone may well provide knowledge but the optimum situation is when this knowledge is personalised and interpreted and becomes more meaningful. Women clearly do not 'complain' about their caregivers. They do not differentiate between the ease with which questions could be asked and the way the doctors spoke to them. These two variables did not differ significantly for any of the three groups. This has been seen earlier where women are loathe to criticise and indeed see their care as good, yet still desire

information. Women were not less satisfied with the opportunities to ask questions or the way they were spoken to. This may reflect possible attitudes regarding the imparting of information. Women may feel that it is up to the doctor to convey test results and explanations rather than for them to request such information.

Such attitudes should then be understood by doctors. In chapter 3 doctors saw the place for such information imparting to be generally within the ante-natal class setting. Those who have received information according to the experimental design do not differ in this rating from the baseline groups either. It does seem that these findings can be attributed to the experimental manipulation as when questioned about satisfaction with progress generally (i.e. other factors connected with the ante-natal check up) women in all three groups, including the information + feedback group, rate this significntly lower than their satisfaction with medical care.

In the information plus feedback group the mean scores on all measures are greater than 6 on the 7 point scale. It would seem that these interviews are reaching optimum satisfaction. The only rating which is signifcantly lower than satisfaction with care is satisfaction with information regarding progress. The experimental manipulation extended to three routine tests only and this particualr question covered other aspects of the ante-natal consultation. As no corresponding information was given on other topics the women may have noticed differences. Perhaps being given information and feedback led to expectations that other aspects of the consultation would be similarly treated and when this was not so they registered a slightly lowered score.

6.3.4 EVALUATION OF KNOWLEDGE

In addition to asking women whether they knew their tests results, they were asked to indicate the test results and interpret them. This allowed for a measure of knowing, accuracy of recall (checked against the medical file notations) and a subjective appraisal of the results to evaluate whether they realised the implications of the figures when they knew them.

Women generally would be familiar with the process of weight recording. However norms for weighing would usually tend to discourage weight gain, whereas in this situation it is weight gain that is being monitored. Indeed no weight gain, or weight loss would be an adverse sign. Women may be less familiar with blood pressure recordings and urine testing. A positive urine test would necessitate a specific colour change on the indicator stick. An acceptable blood pressure reading would depend on the individual woman's own initial blood pressure reading and general parameters of safety. Table 6.6 shows the group effects on the various knowledge scores.

TABLE 6.6 GROUP EFFECTS ON KNOWLEDGE (CHI SQUARE TESTS)

VARIABLE	% WOMEN			CHI SQ
	BASE n=17	INFO n=17	I+F n=21	
KNOW WEIGHT	100%	100%	100%	-
WEIGHT CORRECT	82.4%	100%	100%	7.09 *
KNOW URINE RESULT	82.4%	94.1%	100%	4.26
URINE CORRECT	100%	87.5%	100%	4.40 +
KNOW BP	64.7%	100%	100%	15.1 **
OVERALL ACCUR. INTER	35.3%	35.3%	42.9%	0.31

OVERALL CORRECT	35.3%	64.7%	85.7%	10.3 **

+ p>. 10 * p>.05 ** p>.01

6.3.5. WEIGHT

All women thought they knew their weight reading that day. All women in the Information only and Information + Feedback groups were accurate (within one ounce of the medical file recording). 17.6% of the Baseline group recorded an incorrect weight.

Women were asked if they felt their weight gain was too much, too little or just right. According to the doctor all women in the study showed a weight gain which was within the noraml expectancy range (indeed failure to meet such a criteria would have excluded them from the study). Table 6.7 sets out the distribution of responses on this question.

TABLE 6.7 PERCENTAGE WOMEN IN EACH GROUP APPRAISING WEIGHT GAIN.

WEIGHT GAIN APPRAISAL	BASELINE	INFO ONLY	INFO+ FDBK
TOO MUCH	12.5%	29.4%	23.8%
TOO LITTLE	0 %	5.9%	14.3%
OKAY	87.5%	64.7%	61.9%

(CHI SQUARED =4.638 D.F.=4, SIG =0.32 (NS))

Although there are no significant effects due to group factors on the distribution of responses, it is interesting to note that 29% of the women had misunderstandings about their weight gain, thinking it

too much or too little. It seems that Ley's (1967) finding that preconceptions and misunderstandings are strong and may affect full understanding.

The I+ F group show no better judgement than the others despite being told everything was fine. Indeed they were least likely to say "okay". It may be that familiarity with weighing and weight gain presents normative reference which may be salient. Fishbein (1977) comments on the role of normative beliefs.

6.3.6 URINE TEST

Urine tests within the normal range would give a result "NAD" - nothing abnormal detected. 100% of the I+F group felt they knew the result of this test compared to 94.1% of the I only group and 82.4% of the baseline group.

All those who thought they knew the result were correct in the I+F group and the baseline group. The only inaccuracies occurred in the I only group. I+F women knew the result with accuracy. In the Baseline condition fewer women knew the result, but there were no inaccuracies when they said they knew them. In the I only group more women were likely to say they knew the result than the Baseline group but still fewer than the I+F group. However some members of this group were inaccurate. It may be that the provision of information without explanation increased confidence and knowledge, but at the risk of inaccuracy.

Only a small proportion of women felt they did not know the result of their urine test - all from the I and B groups. Comparisons of those who knew with those who did not would be of interest. As such tests may be biased because of the overall group differences in anxiety and satisfaction in the I+F group, the I+F women were excluded from the analysis. Of the 30 who knew the result, 2 were incorrect. Again, the numbers are too small for meaningful comparison, but are included in the table for reference.

TABLE 6.8 COMPARISONS BETWEEN THOSE WHO DID AND DID NOT KNOW TEST RESULTS AND THOSE WITH ACCURATE AND INACCURATE ANSWERS.

VARIABLE	MEAN SCORES					
	KNOW		2-TAIL	ACCURATE		
	YES (4)	NO (30)		YES(28)	NO (2)	
STATE ANXIETY	41.0	33.9	2.39 *	28.0	34.3	1.57
CARE	5.0	6.3	2.41 *	7.0	6.3	0.92
COMMUNICTN.	5.3	6.1	1.10	7.0	6.0	0.93
URINE TEST	2.3	4.6	2.03 *	6.0	4.5	0.92
BLOOD PRESSURE	4.0	4.7	0.66	6.5	4.6	1.37
WEIGHT	4.3	5.1	0.76	6.5	5.0	1.02
PROGRESS INFO	3.8	5.2	1.54	5.5	5.2	0.22
QUESTIONS	3.8	6.0	2.52 *	6.5	5.9	0.55
WAY SPOKEN TO	5.5	6.3	1.41	7.0	6.28	0.89
AGE	24.5	26.3	0.64	27.0	26.3	0.19
PARITY	1.5	1.8	0.72	3.0	1.7	2.34 *

\+ P<.10 * P<.05 ** P<.01

Inferences from this table are limited as the numbers not knowing their result or recording it inaccurately were small. However those who did not know their result had significantly higher anxiety scores (t=2.39 p=.02 (df 28) and they rated their care and communications significantly lower (t=2.41 p<.01 df (28)) than those who stated they knew their results. They were significantly less satisfied with their urine testing that day and were less satisfied with the ability to ask questions. No other variables differed significantly. Multiparous women were more likely to record inaccurate results.

Accuracy did not affect appraisal of consultation in this study. These subjects had no knowledge that they were inaccurate. They thought they knew their result. It may be that good communictions and a positive interview gives women a feeling of well being which they interpret as reassurance.

As the numbers of subjects are small inferences must be limited. Inaccuracy does not lead to dissatisfaction in this study where subjects were unaware that they were inaccurate. Feeling one knew test results was the crucial variable.

6.3.7 BLOOD PRESSURE

64.7% of the baseline group stated they knew the result compared to 100% of the women in both the I+F and I only groups. The IF group and the I group were significantly more likely to present a correct reading compared to the Baseline group. The IF group were also significantly more likely to record an accurate reading when compared with the I only group (chi square =21.39 p=.0003).

Women who felt they did not know (n=6) were compared with those who felt they did (n=28). Women who recorded wrong results(n=15) were compared with those providing accurate results (N=13). Again I+F subjects were excluded from the analysis to exclude effects of the feedback intervention.

TABLE 6.9 COMPARISONS BETWEEN WOMEN KNOWING AND NOT KNOW ING THEIR BLOOD PRESSURE TEST RESULT (GROUPS B AND I ONLY) AND ACCURACY.

VARIABLE	X SCORE KNOW		T	X SCORE ACCURACY		
	NO (6)	YES(28)	2 TAIL	NO (15)	YES (13)	2 TAIL T
STAI ANX.	37.3	34.2	1.2	35.1	33.1	0.9
CARE	5.7	6.3	1.3	6.3	6.2	0.3
COMMUNICTN	5.8	6.0	0.3	5.8	6.2	0.8
URINE	3.8	4.5	0.6	3.9	5.1	1.6
BLOOD PRESSURE	3.3	4.9	1.8+	4.4	5.5	1.5
WEIGHT	4.0	5.2	1.3	4.7	5.8	1.4
PROGRESS	4.5	5.2	0.8	5.4	4.9	0.7
QUESTIONS	4.8	5.9	1.3	6.0	5.8	0.4
WAY SPOKEN TO	6.0	6.3	0.6	6.5	6.0	1.3
AGE	21.5	27.1	2.5**	26.9	27.3	0.2
PARITY	1.3	1.9	1.5	1.9	1.8	0.5

\+ P<.10* P<.05 ** P<.01

Women who stated they knew their blood pressure reading were significantly older than those who did not (t=3.6 p<.002). They tended to rate communication on this particular test lower (t=1.8 p<.10 df=32). Women showed no other significant difference when

compared with those who did not know their results except when rating their satisfaction with communications about the specific blood pressure test. There was a trend for those who knew the result to rate this aspect higher (t=1.9 p=.06). There were no differences between the groups who were accurate and those who were inaccurate. It appears once again that the feeling of knowing the result determines appraisal rather than absolute accuracy (when subjects were unaware of inaccuracy).

6.3.8 INFORMATION

Women rated information. 47.3% of the whole sample would have liked a lot or a little more information. 50.9% were content with the information they had recived and a small percentage, 1.8% would have liked less information. Table 6.10 sets out desire for information by group.

TABLE 6.10 DESIRE FOR INFORMATION BY GROUP

ATTITUDES	% WOMEN IN CATEGORY			
	TOTAL	BASE	I	I+F
LOT MORE	20.0%	29.4%	17.6%	14.3%
LITTLE MORE	27.3%	17.6%	35.3%	28.6%
AS IS	50.9%	47.1%	47.1%	57.1%
LESS	1.8%	5.9%	0	0

An analysis of variance was carried out examining anxiety scores according to group and information desire.

TABLE 6.11 ANALYSIS OF VARIANCE OF ANXIETY ACCORDING TO GROUP AND INFORMATION DESIRE.

ATTITUDE	MEAN SCORES		
	B	I	I+F
LOT MORE INFO	39.8(5)	40.3(3)	27.0(3)
LITTLE MORE INFO	38.7(3)	35.3(6)	26.7(6)
AS IT IS	32.5(8)	30.9(8)	28.7(12)

GROUP	F=11.6 ***	(DF=2)
INFO	F= 3.8 *	(DF=2)
INTERACT	F= 2.2	(DF=4)

Both group and information desire were significant factors in anxiety score. Subjects who wanted more information in the baseline and I only groups had significantly higher anxiety scores. Those who were content had the lowest anxiety scores. It may be that information is an anxiety reducer or women are generally troubled and this is reflected in a number of ways including desire for more information and higher anxiety score.

6.4. DISCUSSION

There were no age or parity differences between the groups. Differences in anxiety and satisfction were noted. Providing information plus feedback to a group of women in ante-natal clinics resulted in significantly lower anxiety and greater satisfaction than those who had information only and those receiving no experimental input. The provision of information alone did not contribute significantly to anxiety reduction or satisfaction. Why should this be so? Theories describing cognitive factors in medical interviews (Ley 1977) and the importance of the viability of the fetus (Kumar & Robson) will be discussed in the light of these findings. The specific role of feedback will be expanded.

6.4.1. IMPLICATIONS FOR THEORY

Both Reading (1981) and Kumar and Robson (1979) discuss anxiety in relation to worries about the well being of the fetus. Ley (1977) examined levels of understanding of techincal knowledge and satisfaction. He proposed that understanding was a necessary but not sufficient condition for satisfaction. In this study the information only group did not differ significantly from the baseline in terms of anxiety level or satisfaction. Subjects here had information but this was not sufficient. The baseline group was not a true control for "no information", but simply a standardised baseline for comparison against "usual treatment". A group with no information could not be truly or ethically generated for

comparison. It is surprising that the provision of information without feedback had no corresponding gains. It may be that the baseline group were in possession of some information which could have counteracted any beneficial effects of the information imparting. Providing information without feedback or interpretation may have resulted in misunderstandings, which could have counteracted any beneficial effects of the information imparting. There may be some support for this notion in the results. All women in the information plus feedback group who stated they knew their urine and weight results and 85.7% of the blood pressure were indeed accurate. Similar numbers in the information only group thought they knew the result,but 6.2% gave incorrect Urine test results and 33.3% gave incorrect blood pressure results.

Reading (1981) proposed that concerns regarding the viability of the fetus may be a cause of anxiety. Thus one could hypothesise that any intervention which would reduce this concern would concomitantly reduce anxiety. Such a postulation would be confirmed in this study. Individual feedback, together with explanatory information was a significant factor in accounting for lower anxiety in the experimental group. Information alone did not similarly affect anxiety level. I + F produced lower anxiety and higher satisfaction. A further study may look at the role of feedback in isolation by comparing a group receiving feedback only with one receiving feedback plus information. The provision of feedback together with information allowed for the notions of both Ley's cognitive hypothesis and Kumar and Robson's viability hypothesis to be included. The I+F group seemed to maximise on understanding and had fewer inaccuracies or gaps.

Perhaps a combination of these two theories accounts for the group effects noted in this study. If information is given, and it conforms to standards set out by Ley in terms of readability, salience and presentation the necessary (though not sufficient) conditions for understanding would be provided. Factors which could be associated with "sufficient" conditions for understanding may perhaps be contained within the content of the information. In this case the content of the feedback related to test results. Individual feedback was given. In all cases this was positive and ensured the woman that all was well. Such information may have reassured women on the viability of the fetus. This assumes the additional explanatory information allowed women to understand the tests and the implications of such feedback.

It may not only be anxieties regarding the well being of the fetus or the viability of the pregnancy which worry women. The ante-natal consultation itself may be a source of worry. Improving communication during such consultations may also contribute towards reduced anxiety. In chapter 5 women gave many reasons why communications duringhospital interviews were non optimum. In this study there was a correlation between anxiety score and satisfaction ratings. The higher the anxiety the lower the satisfaction with all aspects of care and communication.

Could it be that women are simply "anxious" and thus perceive their consultation as negative? Or on the other hand does a negative consultation increase anxiety? Such a situation may occur in spite of obstetric progress. Perhaps there is some interaction between these factors.

The feedback in this study was aimed at the low risk normal pregnancy. All the feedback, therefore, contained information that "all was well". The provision of such information not only reduced anxiety but significantly increased satisfaction with various aspects of the interview. As the majority of pregnancies are in the normal range (Hall 1980) it seems that such standardised feedback together with brief explanatory information may be potentially useful. Mass approaches to screening render the process repetitive for the doctor who may find it difficult to focus more clearly on the communication needs of all patients. These findings related to low-risk women with positive progress. McIntyre (1979) found that women appreciated feedback when it included information that was not positive. If this is so, then such interventions may well be extended into the cases where all was not well.

6.4.2. SATISFACTION

Women were generally not dissatisfied with their medical care. The rating of satisfaction for this variable was high, with a mean overall rating of 6.45 on a 7 point scale. Furthermore satisfaction with care did not vary significantly across the different groups. Yet satisfaction with communications was lower, significantly so in the information only and baseline groups. As women could discriminate between care and communication aspects of their care there was no category of 'general complainers' to account for any dissatisfaction expressed. This is in line with other studies (Ley 1977) On repeated measures t-test comparing satisfaction with care and other ratings of satisfaction for specific tests and general progress the baseline and I only groups rated their care higher than their satisfaction with communictions. The F+I group had no

such significant differences and appraised this aspect of care equally high. The only ratings which were significantly lower for the I+F group than their rating on medical care were aspects of their consultation which were not experimentally manipulated. Communication on 'general progress'was significantly lower than medical care (p=.05).

Providing information and feedback for routine tests also brought with it increased satisfaction with overall appraisal of the consultation. Women were significantly more likely to have increased satisfaction on non-target aspects of their consultation in the information plus feedback group. They rated the way they were spoken to, the opportunity to ask questions and information regarding progress higher than the other two groups. The provision of information plus feedback on the three tests may have led to an overall feeling of satisfaction. On the other hand, it may be that the provision of such information led to other changes in the consultation. Perhaps having received information these women felt more confident that they could ask questions. Leaflets were only handed out at the end of the interview. In chapter 5 women note that they only think of questions when they are already out of the room. It may be that some women who thought of questions as they were exiting felt able to turn back and have these addressed in the light of the communication effort just experienced from the doctor. Questions may have felt more appropriate or women may have thought their approaches would not be rejected or deemed silly as seen in chapter 5. No recording of the actual interviews was possible but in a later study it would be of interest to observe whether the provision of such an intervention affected the doctor's behaviour or changed the ease and frequency with which women could

question.

Providing feedback may also have affected the doctors' behaviour by focusing their attention on communication aspects of the interview. If this was a function of the experimental intervention it may well account for a further finding that women who received information only were less satisfied with their rating of progress generally than the baseline group. This pattern was similar for appraisal of the way they were spoken to (but did not reach significance). Ceiling effects may have clouded this measure, but it may be worthy of investigation in terms of the implictions of providing unspecific information. It may be that the leaflet without feedback led to expectations that were then not met, and frustration made ratings lower than the baseline group.

In this study information was treated fairly passively with handing out of written facts rather than interactive discussion. Information could be useful as a vehicle in addition to its inherent qualities. The act of providing information, together with the task of handwritten completion of the individualised statements can in themselves provide a useful function where women see the doctor as actively attempting to communicate.

6.4.3. KNOWLEDGE

Ley (1977) contends that knowledge is a basic tool in the area of communications and dissatisfaction could be accounted for, in the first instance, by misunderstandings or lack of knowledge. Such a state, Ley claims could militate against satisfaction. As compliance with advice and subsequent recovery/coping may hinge on

satisfaction, or at least be related, ensuring accurate knowledge devoid of misunderstandings is a pre-requisite.

Subjects were asked after their cosultation whether they knew their results and then noted these down. Accuracy was scored by comparing such notations with case notes. Measures included i) whether women felt they knew results or not, and ii) accuracy.

All women felt they knew the result of their weight test. This may be due to the familiarity of such a procedure, and also to the direct access to outcome knowledge i.e. all the women had to do was look at the scales. No measure was taken of ways in which women usually learn the results to tests. In the pilot study (chapter 3) women reported that they would hope that negative reactions meant all was well. What happens to people who do not know their test results? When one looks at those who did or did not know the results to the Urine and blood pressure test it can be seen that those not knowing had significantly higher State Anxiety scores. Furthermore those not knowing the result to the urine test were more likely to rate medical care lower and communications less satisfactory. There was a trend for them to rate communications regarding the specific tests lower. There were no other significant differences between those who knew and those who did not know.

Claiming and disclaiming knowledge of test results was a meaningful distinction. Comparisons between those who were accurate and those who were inaccurate rendered no differences of significance. There were no differences on the issue of ease of asking questions. It may well be that women feel this information should be forthcoming but that it is not their place to ask for such information. When it

is forthcoming, it is well received and has impact on anxiety levels. This is in line with the finding in chapter 3 that women approach information very passively and somehow feel unable to initiate many information exchange exercises.

Accuracy of knowledge is different from the feeling of knowing or not knowing (albeit correct or incorrect).

Having the feeling that one knows test results is related to reduced anxiety. In spite of the informatin given, 47% of the sample would have liked a little or a lot more information. Only 1.8% felt they were getting too much and stated a desire for less information. Those who wanted more information had higher anxiety scores. There was only one subject in the 'less' category. Doctors often quote reticence at providing information in fear of scaring patients. These figures would show that 1 in every 55 may feel this way. It may be of interest to attempt to identify such individuals and then to chart the progress of their anxiety and information needs so that their needs may be better met rather than basing policy for many on the needs of a few.

SUMMARY

Fifty five low risk pregnant women attending ante-natal clinics were randomly allocated to receive information about their tests, information plus personal feedback and routine treatment. Anxiety, satisfaction and knowledge factors were recorded. There was a significant main effect on anxiety scores and satisfaction whereby the I+F group had lower post-interview anxiety and higher satisfaction than the other two groups. Anxiety correlated with all psychological measures. Knowledge can be divided into groups who thought they knew their results and accuracy scored against doctors' notes. Accuracy was not a significant factor, but feeling they knew results related to reduced anxiety. Despite the information provision a high proportion of the group wanted more information. Those who wanted more information had higher anxiety scores. The role of information as facts compared to information as reassurance is discussed in relation to anxiety and satisfaction.

CHAPTER 7 - OVERALL DISCUSSION AND CONCLUSIONS

7.1 CONCLUSION FROM THE EXPERIMENTAL STUDIES AND SUGGESTIONS FOR FUTURE RESEARCH

The experimental work outlined above has attempaed to investigate the role of commuication, information and anxiety in pregnancy. Four central interactive themes emerge from the studies above. These relate to i) communication, ii) anxiety and coping, iii) pain and iv) the role of theory. A fuller understanding of these may enhance the experience of childbirth for both women, their families and care givers. Women interact with medical staff on many levels over and above their physical well being. Knowledge of these interactions, the forms they take and the effects they engender may allow for a more accurately pitched and positive intervention. This will be discussed followed by a review of methodological considerations including data analysis and gathering problems. This will be followed by a summary of conclusions and suggestions for further research.

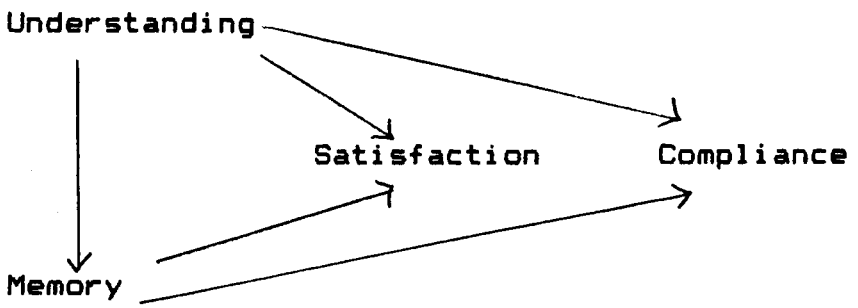
7.2 COMMUNICATION

Communication factors in pregnancy and labour formed part of the discussion whenever women were questioned about their experience. Communication covered a wide range of concepts and permeated the span of pregnancy and childbirth. This included both the form that communication took and the function it served. Communication issues arising in this study related mainly to basic knowledge, the flow of information, the quality of interactions and the nature of such

communications. Information content itself could comprise basic knowledge, provide reassurance, feedback, facts or meet expectations. Appraisel related to content, delivery styles and the flow of two way discussion. Women had significantly more negative comments about communication than positive (chapter 2). Women desired information and the medical profession constituted their desired primary source. Communication correlated with anxiety (chapaer 2). The provision of information plus feedback was a significant factor in satisfaction with communications (chapter 6).

7.2.1 COMMUNICATION OF INFORMATION

Ley (1967) presents a simple model which incorporates understanding, memory and satisfaction factors in compliance.



This model predicts that understanding and memory are essential pre-requisites in an ongoing relationship between satisfaction and compliance. For this to hold true the link between understanding, memory and satisfaction must be established. In this study the nature of understanding was addressed. Is understanding simply gathering knowledge? The process of understanding may involve active seeking or passive receipt. From this study (chaper 5) such information seeking styles may affect what women do with information. Understanding is also not a passive state, but

forms part of a health care system. A model which presents understanding as a factor may not go back far enough and may be simplistic in the way it encompasses a wide range of factors. Knowledge appears to be necessary. This study looked at knowledge levels, information seeking, the role of information, knowledge and accuracy. Future research may highlight the role of personality and situational factors in acquiring knowledge.

The first study examined understanding in terms of knowledge levels, misconceptions and perceived knowledge levels by doctors. It was also useful to see such information gathering strategies in practice both in terms of sources women desired, sources they used and sources doctors thought appropriate and made available.

In the light of this theory information, satisfaction with communications and medical care was charted. Satisfaction was looked at both by analysing absolute levels of satisfaction and the extent to which expectations were met.

7.2.2 COMMUNICATION APPRAISAL

From the outset it became obvious that communication factors were of particular relevance in childbirth. In the open ended interviews women appraised communication constantly with more negative statements about communication than labour pain. The statements displayed an array of communication deficits and pointed out the impact they had on the women. Of note also was the appreciation of good communication. Anxiety correlated with communications, quality of interactions and misunderstandings.

7.2.3 THE COMMUNICTION OF INFORMATION

Women in chapter 3 had knowledge gaps, fundamental difficulties obtaining information and large scale misunderstandings. Ley would predict that these factors could hinder satisfaction with the communication process. Women stated fairly unanimously (see chapter 3) that they desired information. This included technical knowledge, test results, decision making and feedback. They also stated (chapter 3) that the medical profession (firstly their doctor and secondly the midwife) was the main desired source of information.

Doctors, on the other hand, delegated a great deal of information to ante-natal classes (where they themselves would not be present) or felt they would provide such information on request. This may prove difficult as just over a third of women stated they had difficulty in requesting information from their doctor despite an overwhelming desire for such knowledge. The process of information imparting cannot be seen as a simplistic question and answer flow but needs to take into account perceived status of doctors and temerity of women in asking or approaching their doctor. An atmosphere of questioning seems lacking. In chapter 4 women recounted many factors which inhibited questioning.

Doctors misjudged information levels. They felt that simple experience conveyed an expertise on the women and thought the passage of one pregnancy would result in a more informed multiparous group. From the data in chapter 3 parity (or experience) did not confer expertise. Social class was a significant factor in knowledge score.

Were women able to learn? Clearly they were able to learn some things as shown by their ability to know their own body and reproductive organs. Why were there so many misunderstandings? Many medical books (see e.g. Bourne 1975) emphasise how ante-natal contact is important to counteract mythical ideas of pregnancy which women gather from unqualified friends. Yet in chapter 3 women who had contact with someone having a baby were no more or less likely to be knowledgable or exhibit misunderstandings. Education level was a significant factor in knowledge score. It is difficult to know whether this implies ability to learn or ability to gain access to knowledge.

Pendleton (1982) has shown that social class factors may affect doctor patient interactions. A patient of similar educational level to a doctor may stand a better chance of getting factual information from the doctor or indeed engaging in a fruitful communication in the first place. Cartwright (1979) reports similar observations. Middle class women in chapter 3 had higher knowledge scores. Social class was not monitored in chapter 6. A subsequent study may look at the differential effects of feedback on women of different social class.

An examination of knowledge sources, access and appraisal was a subsequent theme. Women were most likely to rate a doctor as their primary choice for information imparting yet about a third of the sample in chapter 3 felt unable to ask their doctor questions. Doctors often presumed the information known.There was little information that they categorically would not give but tended on the whole to provide information on request or, for the most part,

delegate it to ante-natal classes. Such classes are handled by midwives and this immediately brings up a contradiction where women want information to come from doctors who delegate it to another source. To what extent does this matter? If information is accurate in spite of source would it meet the needs anyway or is there something specific about doctors as an information source? In chapter 4 information source seemed to be a crucial factor in pain management plan. Women turning to medical or hospital sources for information were more likely to have a labour with drugs.

Women were then asked (chapter 5) not only if they attended ante-natal classes but which classes they attended, why they did so and to appraise these sources. A retrospective appraisal of such classes was also gathered after the birth. On the whole women who attended classes appraised them highly. Non-hospital classes were seen as more useful in retrospect than hospital classes.

There was a consistent group who did not attend classes. The reasons for this were varied. Most classes were during the day which excluded spouses and working women. Facilities for child care for other children were not available. Women also reported reading books on pregnancy, especially hospital literature. In the final study it was shown that when information was provided, even in written form from the doctor it was of specific use and was associated with improved satisfaction and lowered anxiety.

7.2.4 INFORMATION AS REASSURANCE

What is it about information that is necessary? Which ingredients are helpful and which can be ommitted? Theoretical models provided

a starting point for examintion. The functional relationship between information and anxiety was examined in relation to two competing theoretical models. Janis (1958, 1971) claimed that information seeking was an adaptive behaviour in moderation and it helped cognitive rehearsal for impending threatening situations. Such information would help with adjustment and recovery. Ley presented a somewhat simpler model which notes that information has a crucial role to play in doctor patient communications and dissatisfaction could be linked to misunderstandings and failure to recall. Kumar and Robson (1978) looked more specifically at childbirth and noted that areas of concern were directly associated with the viability of the mother and her baby. One can surmise from this that information which would reassure a mother that such viability is not in question would reduce anxiety with possible positive side effects. As labour is seen as a focal point of pregnancy the link between information and pain needs to be investigated. Psychological theories have shown that pain can be mediated by a host of anxiety reducing procedures. Many of these utilise information which indirectly affects pain perception and pain threshholds.

In the pilot studies (chapter 2) it was clear that many women expressed confusions and fear about their experience. Chapter 4 data suggested that pain, on the whole was managed by epidural or pethidine analgesia. These pharmacological methods had a role but were limited in their efficacy. When coupled with good communications they were enhanced. Dissatisfaction existed, especially with the experience of Pethidine. This could be accounted for by failures to give explicit information. Johnston noted that information about sensations was superior to procedural information when it came to coping. In this study there did not

seem to be differentiation on knowledge scores between procedural and sensation information. However, when labour was assessed in retrospect, there was a correlation between how procedures should be done and anxiety and recovery scores.

When information was structured in the form of positive feedback (as in chapter 6) anxiety was reduced and satisfaction increased.

There was a correlation between Baby Apgar score and satisfaction. (see chapter 5). A healthy baby may account for a satisfied mother. A mother with an ill baby may be duly concerned and may have a different informational and reassurance need. It may be that staff can handle straightforward situations but are less efficient when all is not well. However, the very reason for hospitalisation of childbirth is in the event of difficulties. Thus when these arise expectations and promises of care need to be met.

7.3. ANXIETY

"Pregnancy is a time of great anxiety for women" (Chamberlain 1978 - medical text book). To what extent is this accurate? Anxiety was monitored at all stages of pregnancy. This provided a descriptive statement of anxiety levels, the course of anxiety before and after labour and the interaction with factors such as pain, pain management, communication, feedback and reassurance.

7.3.1 ANXIETY LEVEL

Elliott (1984) finds no confirmatory evidence that pregnancy is a time of great stress. Indeed she found that there was a level of

positive psychological health which was often overlooked. Studies comparing pregnant and non-pregnant groups over time showed greater pathology in the non-pregnant group. Yet Elliott found an increase over time of stress within the pregnant group.

7.3.2 POSSIBLE STRESSORS IN OBSTETRICS

Kumar and Robson (1978) feel that the stressors in pregnancy are specific and relate directly to concerns a mother may have about her own health and the viability of her baby. Studies that have measured anxiety over the course of pregnancy have shown conflicting results. Gorsuch & Key (1974), Murai and Murai (1975) and Elliott et. al. (1983) found no change in anxiety or tension measured over pregnancy. Grimm (1961) found an increase over time, which could be explained by Kumar & Robsons' ideas of concerns for maternal well-being as the labour became more imminent. Yet Kumar and Robson themselves found a drop in anxiety at the end of pregnancy. They explain this by noting that the mere existence of the pregnancy evidences the well being of the baby and earlier concerns may now recede. Lubin et. al. 1975 showed a curvilinear relationship between anxiety and the course of pregnancy with lowest anxiety in the middle. The utilisation of a variety of different measures makes comparisons between studies inconclusive.

In chapter 4 Anxiety level correlated significantly with all pain ratings during labour as well as the Baby APGAR score after delivery. This is in line with a theory that describes anxiety in relation to the wellbeing of the mother (here experienced as pain) and the baby (here indexed by a poor APGAR score). After delivery, there were no significant correlations between pain and anxiety, but

communications did correlate with Anxiety level as did baby APGAR.

7.3.3 INDIVIDUAL VARIATION IN ANXIETY LEVEL

Perhaps one of the problems with the many studies is the tendency to group data and not look at the individual variation and sub- groups in the population. Indeed, Elliott (1983) noted a wide range of individual differences and variance and cautions against pregnancy as a great "leveller" of experience.

7.3.4 ANXIETY AND COPING

Psychological state, particularly anxiety, may be helpful if it gives an index of subsequent coping (Janis 1957,1971). In chapter 5 the mean ante-natal State anxiety was 35.8 and Trait anxiety was 35.2. Post natal State anxiety was 32.1. Comparisons between high, medium and low anxiety subjects was carried out by generating a subset of women. When comparisons between the three groups were made, differences were mostly of a linear form. Low anxiety subjects appraised their care significantly higher, they were more satisfied with ante-natal treatment and overall their satisfaction levels were higher. Women with high anxiety did not differ in their information score or their expectations, yet they did describe a greater number of reasons why they could not approach their doctor for information. Previous obstetric history (which covers miscarriage and termination) was significantly more prevalent among the high anxiety group. Quadratic trends were found when understanding of why procedures were carried out was monitored.

There was a trend ($p<.09$) for cognitive coping to differ

between groups. High anxiety women thought more about their forthcoming labour than medium anxiety women. Anxiety level did not differentiate the groups on labour variables such as length of labour or baby APGAR score. This is in contrast to Crandon (1979) but no sampling data was provided in that study and obstetric complications may not have been excluded.

7.3.5 ANXIETY IN CONTEXT

Thus differences in anxiety level did not necessarily differentiate information women had, but did reflect contrasts in what patients did with the information and the needs which such information met. Higher anxiety subjects reported greater difficulty in approaching their doctors for information. Their expectations of care did not differ, yet their retrospective appraisal of care did. This can be explained by viewing anxiety expression in its context rather than simply focusing on the individual woman. Anxiety is not simply an internal state, but may be a mood expression which is picked up by staff who may react in turn. As patients had the same global information levels, it may be understanding the implications of such information which differs. Knowledge is not a passive gathering of facts, but involves gaining insight into information in order to know how it will affect one's own situation. Indeed, such notions would be in keeping with a 'cognitive' model where women are processing information actively. As such, the higher and lower anxiety groups differed from the medium group who had fewer errors when reporting why procedures needed to be done.

7.3.6 ANXIETY AND RECOVERY

Recovery was not significantly different for these three groups. Yet all the low anxiety group women breast fed their babies and none of them received any analgesia on the ward in the first 48 hours after delivery.

Recovery as a concept needs to be explored in greater depth. The many outcome indices ought to be validatd and this could be an area for future research.

7.3.7 COURSE OF ANXIETY

Labour itself, does seem to be a factor in provoking anxiety. For the whole group ante-natal anxiety measured at 38 weeks was significantly higher than post partum anxiety level. The passage of anxiety for individuals does take on different forms. Some women stay constant or decrease, yet a sub-group show increased anxiety levels after the birth. The effects of this were examined and revealed that increased anxiety women (n=28) were recovering more quickly but rated care on the ward as less satisfactory than those whose anxiety did not increase post partum (n=60). This raises questions for the usefullness of the concept of pre-operative anxiety and 'the work of worry'. The stressor needs to be dealt with and subside if the model is of use. Yet in childbirth although labour may be a stressor, after labour there is a baby to deal with, together with coping, pain, adjustment, feeding and all these may be cumulative stressors. Again it seems, in an applied setting such as obstetrics, stressors are not one-off situations and may be multiple.

Women with increased post partum anxiety did not differ from those

whose anxiety decreased in terms of expectations, labour variables, baby APGAR scores, obstetric history or care during labour. Yet they did rate care on the ward significantly lower. It may well be that the group who were recovering more quickly were coming accross new stressors or it may be that staff reaction to coping differed. Those who were asserting independence may have challenged staff role and thus experience increased anxiety. Conversely those in the care of less satisfactory staff may have had to become more independant to have their needs met on their own and thus recovered quicker at the cost of raised anxiety.

7.3.8 ANXIETY AND FEEDBACK

In Chapter 5 the mean Anxiety score (Spielberger State) for the group was 32.1. Women receiving information plus individual feedback had significantly lower anxiety scores than those receiving explanatory information only or those receiving no input. Women who did not known their urine test results were more anxious than those who did. Information desire was a significant factor in anxiety score. Those who wanted more information were significantly more anxious. It may be that information itself reduces anxiety or women who are generally troubled express concern in many ways including heightened anxiety and increased desire for information.

7.4 PAIN

Pain, particularly pain in labour was examined. This involved both levels of anticipation and coping. An evaluation of pharmacological coping stategies, knowledge and preparation were investigated.

Satisfaction with pain management and the links between anxiety and pain were explored.

If particular labour concerns are anxiety provokers in the ante-natal period (Elliot 1983, 1984, Kumar & Roson 1978) then pain in labour is a key area of focus together with current pain relief procedures.

7.4.1 PAIN MANAGEMENT IN LABOUR

Women in Chapter 2 recall pain and appraise many interactions in the light of pain management. Knowledge levels about pain management in chapter3 was low, and many women had misconceptions about the effects of analgesia on the baby.

In chapter 4 comparisons were made between women receiving different forms of pain management namely Epidural analgesia, Pethidine, or Entonox inhalation and no major drugs. Pain was measured on the McGill Pain Inventory. The scale was sufficiently sensitive to pick up differences in labour and post partum pains. There were no significant differences on pain measured during labour according to group factors. It seems that women do not have pain free labours. Pain management either matches women's thresholds very well, or there is a socially acceptable level of pain reporting. Women with no major analgesia were not in greater pain post partum.

7.4.2 DISSATISFACTION WITH PETHIDINE

Attitudes towards pain management and the implementation of pain relief regimens showed significant differences. Women receiving

pethidine were least satisfied. They rated communications significantly lower and their expectations of labour were unmet. They were least likely to have the same again on a subsequent delivery. They were not a generally "disgruntled or demanding" group, as they rated medical care high and did not differ on expectations.

The dissatisfaction of the Pethidine group did not appear attributable to pain experience or measures of distress, but given the dissatisfaction with explanations, low readability of written information and reported inaccuracy of expectations, it may be associated with the failures in the psychological preparation of the patient.

7.4.3 COMMUNICATIONS AND PAIN MANAGEMENT

Communications played an important role in analgesia grouping. Women attending hospital classes were more likely to have drugs in labour. Women without drugs were not less informed. They were equally likely to seek information, but their sources differed. It may be that women attending particular classes have already decided to have a drug free labour, or classes may persuade them to attempt this. On the other hand hospital classes may familiarise women with drug options or inform them of pain management policy.

Women having drug free labours were less likely to have their partners present. This is a surprising finding. It may be that partners interfere with the communication process between the midwife and the labouring mother or it may be that partners are more effective in persuading women to take up offers of pain relief.

Increased satisfaction with communication correlated with decreased pain scores. Dissatisfaction with communications during labour did not relate to the level of arduous experience.

7.5 COPING

Coping with the experience of childbirth, its pain and anxiety, were also of interest. Sources turned to for coping as well as sources offered were looked at as were cognitive coping strategies adopted by women.

7.5.1 COPING MEASURES

The term 'coping' covers a wide range of factors. Ley (1982) has reviewed the wide array of measures used as outcome measures which are meant to infer coping. These include length of hospital stay, analgesia use, recovery measures, weight loss, compliance with medical regimens, psychological state such as anxiety, depression or other moods, adjustment to mention a few. Janis (1958, 1971) examines information seeking and infers a 'cognitive coping' with the work of worry. Such concepts were not expanded fully. Hulak (1979) operationalised coping in terms of how much an individual thinks about an expected stress". Johnston (1981) looks at recovery as a uni-dimensional move towards regaining a previous 'normal'position over time.

Indeed one of the difficulties in appraising studies is the wide range of coping measures employed which limit comparisons between studies. In this study coping stratergy was looked at by investigating information gathering, and the time spent thinking

about labour (cognitive coping). Outcome measures included traditional clinical measures but also used a measure of recovery and satisfaction.

7.5.2 GATHERING INFORMATION AS A COPING TOOL

Ley (1977) emphasises the fundmental role of accurate information in subsequent appraisal. The use of information as a coping tool was examined here.

Information itself covers aspects of knowledge, reassurance and persuasion. Most women sought information. Desires for information were high. Yet the success of information achievement differed between groups. Middle class women were more successful in gaining information as evidenced by the higher information scores for this group in Chapter 3. It is unclear whether this reflects higher academic ability or increased availability of information due to both source availability and the willingness of doctors to hold discussions with such women. They may also be more efficient at gathering information. Learning from experience was limited. Doctors were unaware of this fact, and felt that labour experience conferred an increased expertise on women. Misconceptions were high.

Such information levels had effects in terms of pain management regimens women subsequently experienced.

7.5.3 COGNITIVE COPING

Cognitive coping correlated significantly with anxiety in Chapter 5. The highly anxious group spent the most time, the low anxiety group

spent less and the medium anxiety group spent the least time thinking about the forthcoming labour.

7.5.4 RECOVERY

Recovery correlated with lowered satisfaction. It seems that women who were recovering quickly either conflicted with medical staff or were in contact with poorer standards of staff and thus had to initiate their own recovery. Surprisingly women with increased intervention in labour showed gains in terms of recvery. It may be that high intervention necessitated disproprtionate levels of staff attention. It also may be that intervention was in line with hospital policy and this merely reflects that women who are not in conflict with hospital policy and accept the care regimens are viewed as 'good patients' and progress quickly in the post partum phase. They may get more attention, or simply more positive feedback and encouragement.

7.6 INTERVENTION

An understanding of the psychological impact of the five main themes set out above provide not only a descriptive and predictive model of experience but also open up the possibility of intervention to good effect.

Broad attempts at intervention are difficult. Houghton (1966) found that changing communication patterns in a controlled study had no impact. It seems that communication factors are important in ante-natal care, but the ways in which they operate are unclear. If Kumar & Robson (1978) are accurate about the nature of the stressors

in pregnancy, then the content of communication may determine efficacy. Information as far as Ley (1977) proposes relates to basic knowledge coupled with minimal misconceptions. In this context information levels, particular in relation to routine screening was low, filled with misconceptions and may potentially produce anxiety in that accurate feedback from routine screening is the only avenue open to pregnant women to gain reassurance of the well being of themselves and their baby.

7.6.1 THE IMPACT OF THE PROVISION OF INFORMATION AND REASSURANCE

In chapter 6 information was experimentally controlled and the impact of various forms of information was monitored. Women received either explanatory information, no intervention, or explanatory informtion together with personalized feedback. The latter group had lower post consultation anxiety scores than the former two groups, was significantly more satisfied and had fewer errors in test result recollection. The provision of simple explanations did not have a similar impact. A future study could investigate whether the effects in the last group were due to the feedback only, the information coupled with the feedback or changes in the doctor/patient interaction as a result of the task of completing the feedback questionnaire.

Although Ley (1982) notes high levels of misunderstandings of medical knowledge by patients it is unclear how these directly interact with satisfaction. In Chapter 6 women who thought they knew the result (be it correct or incorrect) were more satisfied than those who did not. Accuracy was not a factor in satisfaction.

differential role for various types of information. In chapter 6 reassurance was examined. In a subsequent study groups receiving reassurance only could be compared to those receiving information plus reassurance in order to assess the particular role of reassurance. The findings generally attempt to refine the concept of "understanding" and expose the need for the theory to clarify and expand the notions contained under this heading. The nature of the condition and interaction effects may be important starting points.

7.7.2 COGNITIVE FACTORS IN DOCTOR/PATIENT INTERACTIONS

Although information levels were lacking and misconceptions were high, the nature of information and its role need fuller understanding than originally proposed by Ley. When such information is provided, in conjunction with feedback, anxiety levels are reduced and satisfaction is increased. It is unclear whether such effects can be attributed to information alone, or information in conjunction with feedback. Further research needs to be done to see if feedback without explanation is of use. Acknowledging the role of cognitive factors in doctor/patient interactions was substantiated throughout. However, it seems that Ley's model does not go far enough. Cognitive functioning is not limited to memory, understanding and recall factors. There are information processing, context and process effects in the way people process data which were apparrent in these studies.

Satisfaction, itself, may not be absolute but may vary as a function of expectation. In this study the role of expectations and the extent to which they were met was expanded. It seems possible that

levels which satisfy some patients do not satisfy others. One way forward would be to understand why this is so and how to predict which care packages would be deemed satisfactory to which patients. Anxiety level may be a key discriminator at this point.

7.7.3 WELL-BEING OF MOTHER AND BABY

Kumar and Robson (1978) explain anxiety in pregnancy as a reaction to concerns about maternal and neonatal wellbeing. Their theory was supported in this study. Women with past obstetric history had significantly higher anxiety scores (in chapter 5) and were less satisfied with care (chapter 6). Positive feedback (received in chapter 6) which confirms the wellbeing of both baby and mother, affected anxiety and satisfaction ratings. MacIntyre (1979) found that feedback, irrespective of whether it was negative or positive, was appreciated by women. Further research could be carried out to see if it was the nature of the feedback (i.e. positive) rather than the existence of the feedback which affected appraisal by comparing women with positive and negative feedback.

During labour anxiety correlated with all pain measures as well as lowered baby APGAR. These two measures can be taken to reflect maternal and neonatal well being. Post partum anxiety (chapter 4) correlated with communication and baby APGAR. Maternal well-being concerns seem to subside after labour, although worries about the baby do continue. Correlational data cannot infer causation. It is thus not clear that anxiety level heightened pain perception or vica versa. Pre-labour anxiety measures were not taken. These may have given a clearer insight and could be looked at in the future.

The link between anxiety and information has not been sufficiently explored in the literature. Janis postulates that cognitive coping involves seeking adquate information. In this study the higher the anxiety score, the more women thought about their forthcoming labour and delivery. There was a correlation (chapter 5) between cognitive coping and recovery. The use of correlational analysis prevents causal conclusions being made. The notion of coping strategy needs further exploration.

7.8 METHODOLOGICAL CONSIDERATIONS

Although it is beyond the scope of this chapter to present a detailed discussion of statistical methodologies (see individual chapters)some issues do arise in a study of this nature.

7.8.1 DATA

The most noticeable problem lies with the wide range of data and the use to which each data item was put, especially in the intensive studies in chapters 5 and 6. A great difficulty in applied studies is paring down many factors into meaningful and manageable subsets of data. Studies which look at simple single factors may provide a clearer analysis but may not reflect accurately the complexity of the childbirth experience. Where large data sets were used observer reliability was calculated (see for e.g. chapter 2 and 3), and factor analysis (see for e.g. chapter 3)

In the early studies wide ranges of experience were tapped and statistical methodology may be open to criticism. In chapter 4, 55

questions were gathered to cover the range of experience. These were constructed to look at terminology (ante-natal and labour), experience expectations and knowledge of one's own body. Factor analysis was used and loaded on a single knowledge factor. However, with 55 questions a sample of 70 women may not have been sufficient in size to reveal other factors. A larger data set would have been more useful. Scoring in chapter 3 was validated using Kappa analysis between two qualified raters. Satisfaction ratings in chapters 4 and 5 were also wide ranging.

Where possible standardised questinnaires were employed such as the Spielberger State Trait Inventory, the Lorr McNair Mood Checklist and the McGill Pain Questionnaire. These questionnaires have been examined for cross-validation and response sets (Johnston and Hackman) but still may have limitations.

Many of the appraisal items (see e.g. chapters 4, 5, 6) used numerical scales ranging from one to seven. In chapter 4 scores were not evenly distributed and in such cases non-parametric tests were used. When scores were normally distributed parametric tests were used where appropriate. In ideal circumstances standardised measures may be desirable. However, in applied settings practical difficulties may make the use of long inventories difficult.

7.8.4 THE ROLE OF WOMEN

The very fact that this study is aimed at women, their experiences of childbirth and their interaction with the medical profession at this time necessitates an examination of the feminist literature on these issues. There are many methodological obstacles discussed by

this literature which need to be acknowledge in this study. The role of the interview and the interviewer may present problems. One school of thought deems it necessary for researchers to become involved with a group under study in order to fully understand the experience. However, this process in itself may change the interviewer, specifically in terms of objectivity and focus. This could contaminate data. Other workers have argued that any attempt to codify women's experience may negate the quality of such experience and do them a disservice. In this study, women's comments were used in the pilot study. However, the study was concerned with more objective issues related to anxiety and communication and proceeded to gather more systematic data. This may have resulted in a limited view of women's experience generally and subsequent studies with a broader focus may be necessary to address the wide range of questions that this may raise.

7.8.3 SAMPLING

Sampling difficulties cannot be adequately recorded here (see individual chapters for sampling discussion). Suffice it to say that access to patients is at the discretion of the medical staff who may view studies looking at satisfaction with their care as threatening. Many hours, weeks and months were spent in negotiating access, appearing at meetings for permission, ethical coverage and access. Hospital studies were further complicated by the needs to gain permission from all Consultants, midwifery and nursing staff. Women rarely refused to participate and not one complaint was received despite the fact that medical staff used such concerns to argue against access. Samples were gathered from venues who agreed

to access and it is difficult to know whether findings can be generalised to institutions who would not allow such factors to be studied.

Within such constraints, utilising consecutive sample gathering (chapters 3,4,5 and 6) and whole populations over time (e.g. chapters 4,5, 6) were carried out to minimize such bias or to ensure that within such constraints samples were still randomly drawn. Subjects who are under the care of staff who are not willing to provide access to a psychologist studying communication aspects of pregnancy may themselves have an experience with less attention paid to that side of their care.

In chapter 4 women were allocated to pain management groups according to hospital schedule. Random allocation to pain management groups would be unethical and obviously could not be carried out. Results need therefore to be cautiously interpreted.

However, despite the methodological problems involved in measurement and statistical choice, the results do seem to indicate that women desire knowledge. Misunderstandings abound. Experience does not confer expertise. Doctors may be unaware of this and may presume higher knowledge levels in multiparous women when these do not exist. Dissatisfaction with analgesia (Pethidine) existed which could not be accounted for by pain and mood, but was better explained by psychological preparation. Anxiety over the course of labour showed a linear rather than a quadratic form and the provision of information and feedback was a significant factor in lowered anxiety and increased satisfaction.

7.9 CONCLUSION

There are many questions raised in the introduction that the present study has not been able to answer. It has been unable to show any model which could be usefully incorporated into the childbirth area as a predictive tool for outcome. However, it has shown that present models are restricted in their potential use in applied settings. The weaknesses of the models relate mainly to the fact that they do not take into account the interactive and context effects of psychological experience. They do contribute meaningfully in a number of ways. Information level together with errors and misunderstandings can be easily assessed. Women turn to a wide range of information outlets and this could provide easy access points for intervention. Many women were dissatisfied with communication aspects of their treatment during pregnancy although medical care was highly rated. Satisfaction with communications decreased over time although satisfaction with medical care remained constant at four week follow up (chapter 4).

Pain management relies almost entirely on pharmacological intervention and surprisingly little use is made of psychological pain management techniques. Women who receive Pethidine are dissatisfied. This dissatisfaction cannot be accounted for by arduous labour factors but seems to relate more specifically to psychological preparation.

Anxiety levels and absolute information levels were not related, although there was a relation between pre-labour anxiety level and what women did with their information. Women who had higher anxiety scores reported more obstacles approaching their doctor and although

they had information (in form) they had greater numbers of errors in understanding why procedure were done (function).

The most notable factor to emerge from this study was the need to view both anxiety and information as part of a process rather than a static psychological state. Childbirth occurs within a context and anxiety, for example, is not simply an internal experience, but as part of a context may generate staff reaction which in turn may have repercussions on patient reaction. Any model which views these factors out of their context and without accounting for interactive effects will not adequately encompass the full experience.

Intervention, whether it takes the form of short handwritten feedback statements, or full staff workshops, can affect both staff and patients alike. There is a need to examine more closely the psychological effect of the medicalisation of childbirth if the experience is to be improved.

Psychological theory has much to offer in terms of understanding, but in reality this is a very complex experience with a great deal of individual variation. Any progress in understanding the physiology of childbirth needs to go hand in hand with knowledge of the psychological impact of the experience. As one mother put it

> "Anyway, they just wish you all the best and that is it - you are off home - devastation!"

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APPENDIX

Documents appear by chapter in order cited.

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INSTRUCTIONS

You have been kind enough to help in this research. The questionnaire contains some easy and some difficult questions, related to various kinds of information and especially to some technical terms that may be used to describe various aspects of pregnancy. Some questions are quite technical and may contain words which are quite unfamiliar. If you do not know the answer, simply write 'don't know' in the space provided. It may well be that you will be told in time the answers to some of the questions, or that some terms do not apply to you at all. This is not a test of your knowledge, but a detailed questionnaire to look at general standards. Your name is not printed at all on the questionnaire and none of the medical or other staff will be shown any individual person's answer sheet.

Do not worry if you do not know an answer. If you do know an answer, it can be as long as you like or feel necessary. If you run out of space, continue on the back page, making sure that you give the question number as well as the rest of your answer. The spaces provided are not an indication of how long your answer is expected to be, but just simply a standard space to accommodate various handwritings.

If there are any words you have difficulty with, e.g. in pronouncing etc. please ask the researcher. If you have any questions arising from the questionnaire feel free to ask the researcher or your midwife. Please do not find answers for the questionnaire in books as this would defeat the purpose of the study.

Once again, there is no need to put your name on this questionnaire. The few questions about yourself are at the end of the questionnaire. May we wish you all the happiness in the future with your pregnancy.

Lorraine Sherr
Research Psychologist.

QUESTIONS	YOUR ANSWERS
1. What is a gynaecologist?	1.
2. What is a uterus?	2.
3. What is an obstetrician?	3.
4. What is an episiotomy?	4.
5. What is a paediatrician?	5.
6. How much does an average baby weigh at birth?	6.
7. How long is an average pregnancy?	7.
8. What is the cervix?	8.
9. What is a caesarian section?	9.
10. What is a midwife?	10.
11. What is blood pressure?	11.
12. What is anaemia?	12.
13. What is a foetus?	13.
14. What is the fundus?	14.
15. What is an enema?	15.
16. What does 'induced labour' mean?	16.

QUESTIONS	YOUR ANSWERS
33. What is the Rhesus factor?	33.
34. What does breech presentation mean?	34.
35. What is an incubator?	35.
36. Why is blood pressure taken during pregnancy?	36.
37. Why do you have a urine (water) sample test during pregnancy?	37.
38. How many stages are there to labour?	38.
39. What can the doctors do when they think the pregnancy has gone on long enough and they want the baby delivered?	39.
40. Why should you have a blood test during pregnancy?	40.
41. Does breast-feeding prevent you becoming pregnant again?	41.
42. What happens during labour?	42.
43. What happens to the water/fluid surrounding the baby during labour?	43.
44. Why would they give you an enema (suppository - to clear the back passage) when you start labour?	44.
45. Do any pain-killers given during labour affect the baby?	45.
46. What machines can be used to watch (monitor) you or your baby during labour?	46.
47. Do you bleed (like a menstrual period) after the baby is born?	47.

QUESTIONS	YOUR ANSWERS
17. How is it done?	17.
18. What does 'post-natal' mean?	18.
19. How is the baby joined to the mother?	19.
20. What is the amniotic fluid?	20.
21. What does 'ante-natal' mean?	21.
22. Who, if anyone, determines if the baby is a boy or a girl?	22.
23. What is analgesia?	23.
24. What does NAD stand for? (Or refer to)	24.
25. What is pethidine?	25.
26. What are forceps?	26.
27. What is oxytocin?	27.
28. What is an epidural?	28.
29. What does LOA, LOP, ROA, ROP stand for or refer to?	29.
30. What does cephalic presentation mean?	30.
31. What is a scan?	31.
32. What is a placenta?	32.

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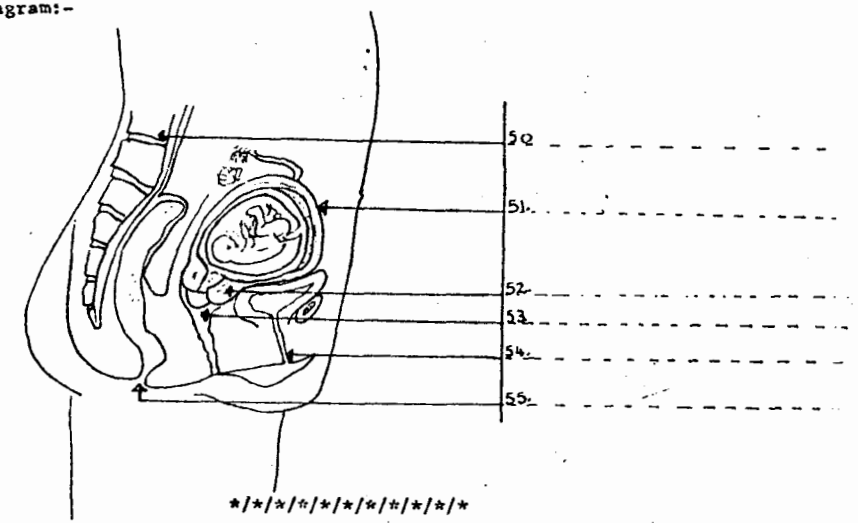
QUESTIONS	YOUR ANSWERS
Under what circumstances would an episiotomy (a cut) be carried out during delivery of the baby?	48. _____
Who is present with a woman during labour and delivery?	49. _____

Label diagram:-



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is your age? _____

is (was) your occupation? _____

is the baby's father's occupation? _____
required if you will be the baby's sole supporter).

is (was) your father's occupation? _____

ou have any C.S.E. credits?.....Yes/No.... (If yes, how many?) _____
ou have any O level credits?....Yes/No.... (If yes, how many?) _____
ou have any A level credits?....Yes/No.... (If yes, how many?) _____
ou have any other training,
Degrees, Diplomas, etc?.....Yes/No.... (Please specify) _____
ou have any overseas training?..Yes/No.... (Please specify) _____

ou in contact with any close friends or relatives who had a baby recently?.....Yes/No Details:- _____

-End-

You.

This is my ..... pregnancy.

a) With regard to these questions. Would you like to know the answers to	All / Some / None
b) Ideally would you like them explained by	Doctor / Midwife / Books / Health Visitor/ Classes / Family & Friends / any / all / other .....
c) Would you feel you could easily ask the professionals for these explanations?	Yes / No
d) If there are certain procedures to be carried out, would you prefer Just to be instructed to do them To be explained why they need to be done To be given explanations and then the choice of having them done or not	 Yes / No Yes / No Yes / No
e) Would you like to be told the results of tests (e.g. blood pressure, blood tests, urine tests, scans, etc.) and what they mean	 Yes / No Yes / No
f) Would you like someone qualified to discuss non-medical matters with? e.g. feelings, diet, emotions, exercise, baby equipment, baby development, expectations, breast feeding, bottle feeding, etc.?	Yes / No

APPENDIX

University of Warwick

Professor John Annett, M.A., D.Phil.
Chairman

Department of Psychology
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Telephone Coventry (0203) 24011

July, 1979.

reply to:- Ms. L. Sherr

Dear Mrs. [illegible],

I am a research psychologist working under a Social Science Research Council grant engaged in a long term study of the psychological needs of women during pregnancy and childbirth, with a particular emphasis on the role of communication.

I have recently carried out a survey of pregnant women enquiring into the kinds of information they have and feel they want. A questionnaire tested their knowledge of specific factual information and enquired whether and how they would ideally like to be given this information.

In order to asses the amount of such information normally given to pregnant women I am asking a number of Doctors and Midwives chosen throughout the country, including yourself, to look at the list of questions and mark them accordingly.

I would be very grateful if you could complete the enclosed tables. Your replies need not be signed and will be treated in the strictest of confidence. Please return the forms in the enclosed postage paid envelope.

Yours sincerely,

Lorraine Sherr
Research Psychologist.

APPENDIX

University of Warwick

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INSTRUCTIONS

TABLE I

Table I contains the list of questions originally given to the women against which you are asked to mark for each question what percentage of patients in each category would be likely to know the correct answer. There is a rough subdivision into "working" / "middle" class women in order to take account of socio-economic differences in education and work. A separate column exists for primigravidae and multigravidae.

TABLE II

Table II is a different exercise on the same list of questions asking about the information you would give in your own practice (recognising that this may be only a part of the pregnancy care your patients recieve).

N.B. KEY:- Where information is given routinely on a particular question please use the following key to assist you in stating by whom, at what venue and stage this is done.

Classes - This refers to all mothercraft classes, run by clinics, doctors, N.C.T. etc.

G.P. - This refers to their own G.P. say for e.g. if shared care is being carried out.

Clinics - This refers to all formal appointments at the clinic, and explanations could be given by doctors, midwives, nurses, receptionists, physiotherapists, social workers etc.

Books - All kinds of literature are covered under this heading, please differentiate between recommended, provided and incidental reading.

Other - Any source not covered by the above should be enlarged upon and included here.

TABLE II (Please tick appropriate box)

QUESTION	DO YOU PRESUME PATIENT KNOWS ANSWER TO THIS		IN YOUR PRACTICE IS AN ANSWER GIVEN:			
	Yes	No	(a) Not given	(b) In special circumstances only	(c) Only if requested	(d) Routinely (If so by whom, at what venue and stage)
1. What is a gynaecologist?						
2. What is a uterus?						
3. What is an obstetrician?						
4. What is an episiotomy?						
5. What is a paediatrician?						
6. How much does an average baby weigh at birth?						
7. How long is an average pregnancy?						
8. What is the cervix?						
9. What is a caesarian section?						
10. What is a midwife?						
11. What is blood pressure?						
12. What is anaemia?						
13. What is a foetus?						
14. What is the fundus?						
15. What is an enema?						
16. What does 'induced labour' mean?						
17. How is it done?						
18. What does 'post-natal' mean?						
19. How is the baby joined to the mother?						
20. What is the amniotic fluid?						
21. What does 'ante-natal' mean?						
22. Who, if anyone, determines if the baby is a boy or a girl?						
23. What is analgesia?						
24. What does RAD stand for? (Or refer to)						
25. What is pethidine?						
26. What are forceps?						
27. What is oxytocin?						

APPENDIX

TABLE II (Please tick appropriate box)

QUESTION	DO YOU PRESUME PATIENT KNOWS ANSWER TO THIS		IN YOUR PRACTICE IS AN ANSWER GIVEN:			
	Yes	No	(a) Not given	(b) In special circumstances only	(c) Only if requested	(d) Routinely (If so by whom, at what venue and stage)
28. What is an epidural?						
29. What does LOA, LOP, ROA, ROP stand for or refer to?						
30. What does cephalic presentation mean?						
31. What is a scan?						
32. What is a placenta?						
33. What is the Rhesus factor?						
34. What does breech presentation mean?						
35. What is an incubator?						
36. Why is blood pressure taken during pregnancy?						
37. Why do you have a urine (water) sample test during pregnancy?						
38. How many stages are there to labour?						
39. What can the doctors do when they think the pregnancy has gone on long enough and they want the baby delivered?						
40. Why should you have a blood test during pregnancy?						
41. Does breast-feeding prevent you becoming pregnant again?						
42. What happens during labour?						
43. What happens to the water/fluid surrounding the baby during labour?						
44. Why would they give you an enema (suppository - to clear the back passage) when you start labour?						
45. Do any pain-killers given during labour affect the baby?						
46. What machines can be used to watch (monitor) you or your baby during labour?						
47. Do you bleed (like a menstrual period) after the baby is born?						
48. Under what circumstances would an episiotomy (a cut) be carried out during delivery of the baby?						
49. Who is present with a woman during labour and delivery?						
Label diagram						
50						
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55						

TABLE I

QUESTIONS	% Women responding correctly			
	Primigravidae		Multigravidae	
	Working Class	Middle Class	Working Class	Middle Class
1. What is a gynaecologist?				
2. What is a uterus?				
3. What is an obstetrician?				
4. What is an episiotomy?				
5. What is a paediatrician?				
6. How much does an average baby weigh at birth?				
7. How long is an average pregnancy?				
8. What is the cervix?				
9. What is a caesarian section?				
10. What is a midwife?				
11. What is blood pressure?				
12. What is anaemia?				
13. What is a foetus?				
14. What is the fundus?				
15. What is an enema?				
16. What does 'induced labour' mean?				
17. How is it done?				
18. What does 'post-natal' mean?				
19. How is the baby joined to the mother?				
20. What is the amniotic fluid?				
21. What does 'ante-natal' mean?				
22. Who, if anyone, determines if the baby is a boy or a girl?				
23. What is analgesia?				
24. What does MAD stand for? (Or refer to)				
25. What is pethidine?				
26. What are forceps?				

APPENDIX

TABLE I - continued

QUESTION	% Women responding correctly			
	Primigravidae		Multigravidae	
	Working Class	Middle Class	Working Class	Middle Class
27. What is oxytocin?				
28. What is an epidural?				
29. What does LOA, LOP, ROA, ROP stand for or refer to?				
30. What does cephalic presentation mean?				
31. What is a scan?				
32. What is a placenta?				
33. What is the Rhesus factor?				
34. What does breech presentation mean?				
35. What is an incubator?				
36. Why is blood pressure taken during pregnancy?				
37. Why do you have a urine (water) sample test during pregnancy?				
38. How many stages are there to labour?				
39. What can the doctors do when they think the pregnancy has gone on long enough and they want the baby delivered?				
40. Why should you have a blood test during pregnancy?				
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43. What happens to the water/fluid surrounding the baby during labour?				
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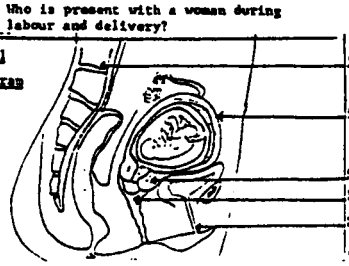
45. Do any pain-killers given during labour affect the baby?				
46. What machines can be used to watch (monitor) you or your baby during labour?				
47. Do you bleed (like a menstrual period) after the baby is born?				
48. Under what circumstances would an episiotomy (a cut) be carried out during delivery of the baby?				
49. Who is present with a woman during labour and delivery?				
Label diagram 				

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Sub	occupation	Mum occup	Father occup	CSE	O	A	Other	CLASS
55	Costing Clerk	Material Controller	Bricklayer & Bpilder	no	no	no		
56	Senior Catering assistant	Postal Officer		no	no	no		
57C	Cashier	Fitter		-	-	-		
58	Sales Assist	Telephone Engineer	Military RSM + Stock Controller	no	no	no		
59	Cook	Jig Borer	Gas Brd Engineer	no	4	no	Dip in nutrition & Food hygiene	
60	Purchase Ledger Clerk	Postal Offic	Stockroom manager	no	no	no		
61	Cashier	Demolition labourer	Clerk	3	2	no		
62	Cashier	Fitter	Delivery man	yes	no	no		
63	Cashier	Welder	Joiner	no	no	no		
64	Bank Supervisor	Engine Fitter	Foreman	4	no	no		
65	Housewife	Machine setter	Shop Steward	no	no	no		
66	Shop Asst	Sales Rep	Assembly inspector	no	no	no		
68	Semi-skilled inspector in a factory (bearings)	Charge hand in factory	Draftsman technical design	no	no	no		
69	Care attend cmp	Machine operator	Fitter tester	no	no	no		
70	Secretary	Engineer	Service manager	no	4	no		
88	Auxiliary nurse	Soldier	Caretaker	no	no	no		
28	Clerk car industry	Toolmaker	Aero-electrician	no	no	no		

Sub	Occupation	Mum Occup	Father Occ	CSE	O	A	Other	CLASS
23p	legal sec	Teacher	Steel Hardner	no	7	3		
24p	Teacher	Probation officer	Director of Education	no	9	3	Teaching Cert.	
25p	Secretary	Co Director Insurance Broker	Engineer	no	no	no	Typing Diploma	
26p	Teacher	Graphic Designer	Builder Painter Decorator	no	5	1	Cert in educ.	
27p	Shop managerees	Student	Shop owner	9	no	no		
29	Teacher	(1 ptf	Research engineer	no	7	1	B.Ed	
30	Policewoman then Clerical assistant in Tel. sales	Telephone eng.	Engineer	1	5			
31	Pharmacist	Teacher	Hosp. prter	no	11	4	B Pharm	
32	Librarian	Development engineer	Plumber	no	9	3	degree in librarian ship	
33	Social worker	1 pf	co director	no	7	no	Social work qual.	
34	Teacher	Sales Manager	Shop insp.	no	10	3	Degree & teaching certif.	
35	teacher/Post grad student	Lecturer	Post office worker	no	overseas qual		BA French BEPC	
36	Teacher	Teacher	Farmer	no	7	2	Teaching certificate	
37	Secretary	Design engineer	shopkeeper	no	5	no	secretary diploma	

-2-

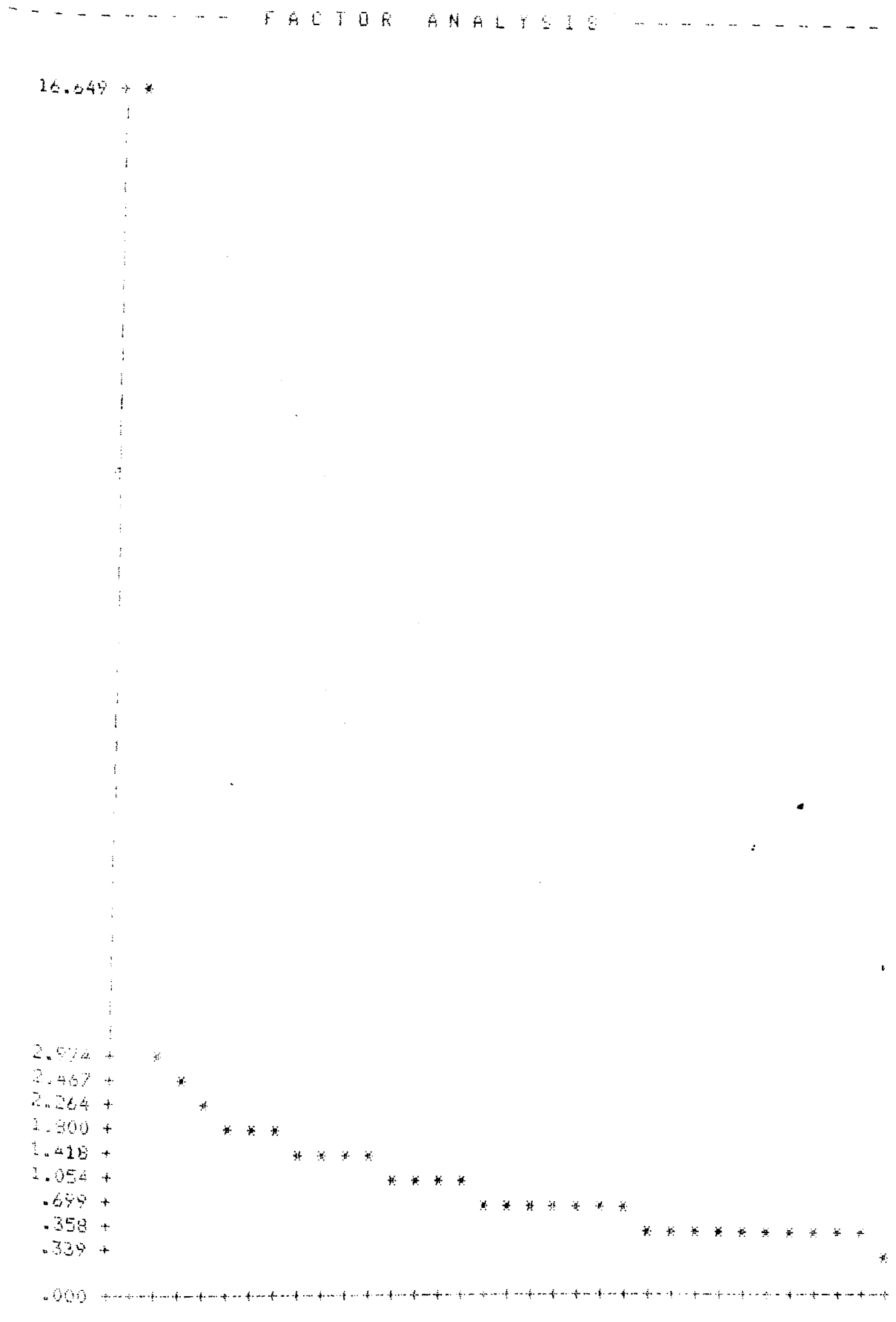
Sub.	Occupation	Mum occup	father occup	CSE	O	A
38	Medical lab scientist (Haemotology)	Research engineer	Research Physicist	no	8	
39	Biology Lecturer	Teacher	Expert manager	no	8	
40	Drama school and the arts	Lab Technician	Electronic technician	1	8	
41	Teacher	Teacher	Storeman	4	7	
43	Assistant sales manager	Machine tool engineer	Sheet metal worker	no	6	
45	Teacher	Surveyor	Labourer	2	7	
46	Teacher	Teacher	Plasterer	2	7	
47	Advertising Represent.	Marketing Executive	Maintenance superint.	no	2	
48	Art Teacher	Club manager	Chauffer	no	4	
49	Teacher	Technical illustrator	Clerk	no	6	
50	Psychiatric nurse	Computer Systems designer	Medical Doctor	5	2	
51	Secretary	HGV Driver	Newsagent	no	9	
52	Cashier	Planning engineer	Prison Offic	no	no	
53	Clerk Typst	Inspector	Machinist	7	no	
54	Hospital Domestic	Fireman	Pig Farmer	no	no	

Sub.	Occupation	Mum Occup.	Father Occ.	CSE	O	A	Other	Class
1 m	County Court Officer	Teacher	Inspector Machine tools etc.	no	4	3		
2m	GEC inspector	Self-employed. Meat/Pie sales	Inspector at chrysler UK	no	no	no		
3m	Student nurse	Builder	Storeman in factory	5	5	no		
4m	Housewife	Electrician	Fitter	no	no	no	RSA commercial cert.	
5m	University teacher	University teacher	School teacher	no	9	4	BA M Phil PhD	
6.m	Medical Lab scientist	Painter & decorator	Storeman	no	4		ONC & HNC in medical lab sci	
7.m	Housewife & Mother was shorthand typist	Assistant manager in travel agency	Bricklayer & machine maintenance	7	no	no	typing diploma	
8m	Nursery schl teacher	Programmer analyst	College principal	no	7	1	teaching diploma	
9m	civil servant	Foreman	Toolmaker	no	5	1		
10m	Secretary	Manufacturer	Co.Director	1	6		Diploma in OND & Advert admin.	
11m	Data Proces supervisor	Sales Engineer	Grinder	no	no	no		
12m	Hairdresser	Co. Director	Electrician	no	no	no	Haird. apprent.	
13m	Child minding nanny	Electro plater for GEC	Gardener & caretaker	no	no	no		
14m	Housewife	Builder	Craft fitter	no	no	no		
15m	Telex operator	Bricklayer	Storekeeper	no	no	no		

Sub	Occupation	Mum Occup	Father Occ
16m	Housewife	Labourer	illegible
17m	Mother	Setter	not given
18m	Canteen assistant	Lorry Driver	Lorry Driver
19m	Housewife	MOT tester	Soldier
20m	Mother	Moulder	not given
21m	Housewife	Presser	not given
22m	Typist	Mechanic	Machine shpp foreman
69m	Teacher	Clergyman	Registrar of Births Death & Marriage
67m	Insurance Clerk	Long-Distance driver	Car factory worker

APPENDIX 3.9

FACTOR ANALYSIS



APPENDIX

Part 1. FEELINGS OF PAIN

Some of the words below describe your pain. Mark ONLY those words that best describe it. Leave out any category that is not suitable. Use only a single word in each appropriate category - the one that applies best.

1	2	3	4
Flickering	Jumping	Pricking	Sharp
Quivering	Flashing	Boring	Cutting
Pulsing	Shooting	Drilling	Lacerating
Throbbing		Stabbing	
Beating		Lancinating	
Pounding			
5	6	7	8
Pinching	Tugging	Hot	Tingling
Pressing	Pulling	Burning	Itchy
Gnawing	Wrenching	Scalding	Smarting
Cramping		Searing	Stinging
9	10	11	12
Dull	Tender	Tiring	Sickening
Sore	Taut	Exhausting	Suffocating
Aching	Splitting		
13	14	15	16
Fearful	Punishing	Wretched	Annoying
Frightful	Gruelling	Blinding	Troublesome
Terrifying	Cruel		Miserable
	Vicious		Intense
	Killing		Unbearable
17	18	19	20
Spreading	Tight	Cool	Nagging
Radiating	Numb	Cold	Nauseating
Penetrating	Drawing	Freezing	Agonizing
Piercing	Squeezing		Dreadful
	Tearing		Torturing

Part 2. STRENGTH OF PAIN

The following 5 words represent pain of increasing intensity. They are:

1	2	3	4	5
Mild	Discomforting	Distressing	Horrible	Excruciating

To answer each question below, write the number of the most appropriate word in the space beside the question.

1. Which word describes your pain?_____
2. Which word describes it at its worst?_____

Lorr McNair Scale

	Not at all	A little	Quite a bit	Extremely
optimistic	1	2	3	4
full of pep	1	2	3	4
on edge	1	2	3	4
jittery	1	2	3	4
serious	1	2	3	4
lonely	1	2	3	4
alert	1	2	3	4
worthless	1	2	3	4
lazy	1	2	3	4
relaxed	1	2	3	4
nonchalant	1	2	3	4
serene	1	2	3	4
weary	1	2	3	4
at ease	1	2	3	4
nervous	1	2	3	4
ready to fight	1	2	3	4
active	1	2	3	4
spiteful	1	2	3	4
apathetic	1	2	3	4
introspective	1	2	3	4
annoyed	1	2	3	4
pretty good	1	2	3	4
frightened	1	2	3	4
blue	1	2	3	4
shaky	1	2	3	4
angry	1	2	3	4
gay	1	2	3	4
unhappy	1	2	3	4
thoughtful	1	2	3	4
energetic	1	2	3	4

	Not at all	A little	Quite a bit	Extremely
helpless	1	2	3	4
contemplative	1	2	3	4
earnest	1	2	3	4
hopeless	1	2	3	4
composed	1	2	3	4
lethargic	1	2	3	4
furious	1	2	3	4
preoccupied	1	2	3	4
listless	1	2	3	4
tense	1	2	3	4
calm	1	2	3	4
worried	1	2	3	4
resentful	1	2	3	4
excited	1	2	3	4
on top of the world	1	2	3	4
grouchy	1	2	3	4
vigorous	1	2	3	4
languid	1	2	3	4
lively	1	2	3	4
tired	1	2	3	4
enthusiastic	1	2	3	4
bad tempered	1	2	3	4
sluggish	1	2	3	4
cheerful	1	2	3	4
pensive	1	2	3	4
happygo lucky	1	2	3	4
elated	1	2	3	4
carefree	1	2	3	4
light-hearted	1	2	3	4
anxious	1	2	3	4

Pond Street
Hampstead
London NW3 2QG

Telephone
01-794 0500

The Royal Free Hospital

Dear,

As you remember, you helped us in our research during your stay at the Royal Free Maternity Hospital. The project lead to a greater understanding of the experience of having a baby, for which we would like to thank you.

In order to understand how you are feeling now we are carrying out a follow-up of this study. We have a few questions to ask you about the rest of your stay in hospital and would be grateful if you could fill in the questionnaire and return it to us.

This study should help improve care for the future and it is important to us to receive all replies. There are no right or wrong answers. We want the questionnaire filled in weeks after delivery and we would ask you to fill this in within the next two days and return it to us.

There is no need to affix a stamp as postage has already been paid. There is also no need to put your name on your reply, and, as before, every confidence will, of course, be respected. May we thank you for your help and wish you all the best.

Yours sincerely,

Instructions

Below are a set of questions about your feelings* with regard to various issues. We want you to read and answer every question. For each question you can choose one of seven answers to show how good or bad you thought it was.

1. Bad, this should not be allowed to happed.
2. Worse than average.
3. O.K. but room for improvement.
4. Average, what might usually happen.
5. Good, above average.
6. Very good indeed.
7. Excellent the best possible.

* For each question please tick the box which best describes your feelings.

WHAT DO YOU FEEL ABOUT?

	1	2	3	4	5	6	7
1. Before Coming Into Hospital							
a) Your visits to the hospital for ante-natal care.							
b) Communication.							
c) Information you were given about your progress.							
d) The information you were given about having a baby.							
2. In The Labour Ward							
a) Your care on Labour Ward.							
b) The information you were given about procedures (e.g. injections, internal examinations etc.)?							
c) Information about your progress.							
d) The way they spoke to you.							
e) Your labour.							
f) The amount of pain you had during labour.							
g) You had _____ for labour pains:							
(i) The success of pain relief for you.							
(ii) The choice of pain relief for you.							
h) The first hour after your baby was born.							
3. In S or A Ward							
a) The care you received on this ward.							
b) The care your baby received on this ward.							
c) How they spoke to you.							
d) How much information they gave you about what they were doing.							
e) Information about your own progress.							
f) Information about your baby's progress.							
g) How much information they gave you about feeding the baby.							

APPENDIX

For the following procedures please state briefly why you think you would need them, what will be done and how you will feel.

Procedure	Why would you need it	How will it be done	What do you think it will feel like
1. Enema			
2. Entonox (Gas & Air)			
3. Rupturing Membranes			
4. Monitors			

Procedure	Why would you need it	How will it be done	What do you think it will feel like
5. Drips			
6. Episiotomy (cut)			
7. Pethidine			
8. Forceps			
9. Epidural			
10. Womb Dilatation measuring			

APPENDIX

ANTE-NATAL QUESTIONNAIRE

1. Have you attended hospital Ante-Natal classes? -----Yes -----No

   (if the answer to this question is No please go to question 8)

2. How many did you attend? ----------

3. Did they cover the things you wanted to know?

   Thoroughly .....
   Quite a bit .....
   Slightly .....
   Not at all .....

4. Do you think the classes will prove useful when you have your baby?

   Very useful.....
   Quite useful.....
   Slightly useful.....
   Not at all.....

5. How good were the discussions explanations?

   Excellent .....
   Very good .....
   O.K. .....
   Not very good.....

6. What do you think are the benefits of the classes. (Number in order of importance - 1 being the most important and 5 the least important).

   Breathing exercises ----
   Preparation for what will happen ----
   Opportunity to talk to other expectant mums ----
   To get to know staff and hospital ----
   Answering questions and giving explanations ----

7. What was the main reason for you going to classes?

Doctor suggested it.....
Thought everyone was supposed to.....
I felt it was important.....
Friends/family advised me to go.....

Other (please specify)

.....

If the answer to No. 1 was no please answer the following question.

8. Why did you decide not to come to hospital Ante-Natal classes?

Inconvenient time .....
Did not know about them .....
Did not want to.....
Went last time.....
Went to other kinds of classes.....

Other (please specify)

.....

9. Have you been to any other Ante-Natal classes? ----Yes--- No

(if the answer to this question is No please go to question 16)

10. If answer to question 9 is Yes please state which ones?

.....

11. Did they cover the things you wanted to know?

Thoroughly.....
Quite a bit.....
Slightly .....
Not at all.....

12. Do you think the classes will prove useful when you have your baby?

Very useful .....
Quite useful .....
Slightly useful .....
Not at all .....

13. How good were the discussions&explanations?

Excellent .....
Very good.....
O.K.....
Not very good.....

14. What do you think are the benefits of the classes. (Number in order of importance - 1 being the most important and 5 the least important).

Breathing exercises .....
Preparation for what will happen.....
Opportunity to talk to other expectant mums.....

15. Have you read anything about pregnancy and childbirth?

-------Yes -------No

16. Have you read any of the following? (Tick whichever you have read).

Hospital Pamphlets .....
Popular Press Books.....
Biology Books .....
Medical Books .....
Magazine Articles .....

17. Why did you read this literature?

18. What were your reasons for not reading certain things?

19. If you want some information who would you find it easiest to ask? Please give a first and second choice.

Own G.P.....
Hospital Consultant .....
Nurse.....
Hospital Doctor.....
Midwife.....
Family.....
Friends.....

Other (Please specify)

.....

20. What were the main reasons for not asking? Tick all the points that describe your feelings?

Always able to ask.....
All seemed too busy .....
Not enough time.....
I am shy to ask.....
Did not want to know.....
They do not make it easy to ask.....
I thought they would think my questions silly.....
Never thought of questions till after.....
Could not think of any to ask
.....

21. Have you spoken to friends or family about what labour is like?

Yes, in detail .....
Yes, briefly.....
Only a little.....
Not at all.....

APPENDIX

SATISFACTION QUESTIONNAIRE

---

1 2 3 4 5 6 7

Not at all satisfied ... very satisfi

Please circle relevant number.

HOW SATISFIED WERE YOU WITH:

1. Your first booking clinic at the hospital. 1 2 3 4 5 6 7

   Why.....

2. Hospital ante-natal care. 1 2 3 4 5 6 7

   Why.....

3. G.P. ante-natal care. 1 2 3 4 5 6 7

   Why.....

HOW SATISFIED DO YOU THINK YOU WILL BE WITH THE FOLLOWING:-

4. Admission to hospital in labour. 1 2 3 4 5 6 7

   Why.....

5. The care you will receive in labour. 1 2 3 4 5 6 7

   Why.....

6. The care you will receive during the actuall 2 3 4 5 6 7
   birth of the baby.

   Why.....

7. Immediately after the baby is born. 1 2 3 4 5 6 7

   Why.....

HOW SATISFIED DO YOU THNIK YOU WILL BE WITH THE FOLLOWING:

8. The first day on the ward. 1 2 3 (4) 5 6 7

Why.....but you then I leave you.....
too many patients - I care yet

very anxious not at all anxious
1 2 3 4 5 6 7

9. HOW ANXIOUS ARE YOU ABOUT:

a) Your labour. 1 2 3 (4) 5 6 7

Why.....hope baby...time birth.....

b) Your baby. 1 2 (3) 4 5 6 7

Why.....

Coping with your baby. 1 2 3 4 (5) 6 7

Why.....

10. How much of the time have you been thinking about being in labour and your baby being born?

1. Virtually all the time .....
2. A great deal .....
3. Fairly often.....✓.....
4. Occasionally.....
5. Not at all.....

APPENDIX

CLINICAL DATA

Name:

Address:

Occupation:

Previous History:

Consultant:

Length of Labour:

1st stage _____

2nd stage _____

3rd stage _____

Analgesia:

Epidural..... details.....
Pethidine..... details.....
Entonox..... details.....
No analgesia..... details.....

Baby apgar 1 .....
Baby apgar 2 .....

Birthweight.....
Sex .....

Episiotomy Yes/No

Baby in special care (SCBU) yes/no

Analgesia on wards day 1 day 2 day 3

APPENDIX

PROCEDURES

Please go through the following procedures, and circle which ones you had, Then for all of them please tick whether you felt the information you had was "O.K." or whether you would have liked "more".

P R O C E D U R E	WHY YOU WOULD NEED IT		HOW IT IS DONE		HOW YOU WILL FEEL	
	O.K.	MORE	O.K.	MORE	O.K.	MORE
1. Enema						
2. Entonox						
3. Rupturing Membranes						
4. Monitors						
5. Drips						
6. Episiotomy						
7. Pethidine						
8. Forceps						
9. Epidural						
10. Womb Dilatation Measures						

APPENDIX

Post Partum Recovery

How do you feel about the following-

1. Sleeping
   - Back to normal
   - ✓ Slight Difficulty
   - Great Deal of Difficu
   - Need help

2. Bathing
   - Back to normal
   - ✓ A little difficulty
   - A great deal of diff
   - Need help from a nur

3. Walking
   - Back to normal
   - ✓ Slightly difficult
   - Great deal of diffic
   - Need help to walk

4. Feeding the baby
   - ✓ No problems
   - A few slight proble
   - Quite a lot of pro
   - Need help from a nu

5. Passing urine
   - Back to normal
   - ✓ Slight difficulty
   - Quite difficult
   - A great deal of diff

6. Moving your bowels
   - Back to normal
   - Slightly difficult
   - Quite difficult
   - ✓ A great deal of diff

7. Caring for the baby
   - ✓ No problems
   - A few slight problem
   - Quite a lot of probl
   - Need help from a nur

8. Tiredness
   - ✓ Not at all
   - Slightly tired
   - Quite tired
   - Extremely tired

POST PARTUM QUESTIONNAIRE

Not at all satisfied 1 2 3 4 5 6 7 very satisfied

How satisfied were you with:-

1) Admission to hospital in labour? 1 2 3 (4) 5 6 7
Why. Waited for Sometime before we got any response.

2) The care you received in labour? 1 2 3 4 5 6 (7)
Why. very helpful

3) The care you received during the actual birth? 1 2 3 (4) 5 6 7
Why. Because they were very busy

4) Immediately after the baby was born? 1 2 3 (4) 5 6 7
Why. Had to wait for Sometime

5) The way they spoke to you? 1 2 3 4 5 6 (7)
Why. very nice

6) First day on Aldrich Blake/Scharlieb Ward? 1 2 3 (4) 5 6 7
Why. very busy Shortage of staff

7. Communication with the medical staff? 1 2 3 4 5 6 (7)
Why. very good

Very anxious 1 2 3 (4) 5 6 7 Not at all anxious

8) How anxious were you during labour?

Very well 1 (2) 3 4 5 6 7 Not at all well

9) How do you feel you coped during labour?

Not at all accurate 1 2 3 (4) 5 6 7 Very accurate

10) How accurate were your expectations of the effect of any pain relief you had?

A great deal 1 2 3 (4) 5 6 7 Not at all

11) During your labour & delivery how much did the hospital staff try to explain things?

12. Looking back how useful were the Hospital Ante-Natal classes?

Very.....✓
Quite.....
Slightly....
Not at all...

13. Looking back how useful were any other ante-natal classes?

Very.....
Quite.....✓
Slightly.....
Not at all...

14. Looking back how useful were the books you read?

Very.....✓
Quite.....
Slightly.....
Not at all.....

15. Looking back how useful were the discussions you had with friends/family?

Very.....
Quite.....
Slightly.....✓
Not at all.....

16. Looking back how useful was the information given at the clinic?

Very.....
Quite.....✓...
Slightly.....
Not at all.....

17. Looking back at the information you were given before would you have liked?

More.... Less.... Liked it as it was ✓

APPENDIX

DEPARTMENT OF PSYCHOLOGY

UNIVERSITY OF WARWICK
COVENTRY CV4 7AL

TELEPHONE COVENTRY (0203) 24011
EX. 2537

Dear Dr ,

I am a research Psychologist on a Social Science Research Council grant at the University of Warwick. At the moment I am carrying out a research programme looking at various psychological aspects of pregnancy.

One part of my study is looking at various aspects of information available to women, gauging their attitudes to these and the effects and interactions of such information on outcome. I have been given permission by the Obstetric Department and Ethical Committee at the Warneford Hospital to approach women attending their clinics to request them to participate in the study.

As some of your patients attend the Warneford there is a possibility that they may be approached and will consent to assist with the research. This will involve them in two interviews; firstly at ± 37 weeks and secondly post partum. Obviously all confidentialities will be resepected. We naturally felt it would be of interest to you to be informed of the research as a few of your patients may well be involved.

If you have any queries or questions please feel free to contact me at the University.

Yours faithfully,

Lorraine Sherr
Research Psychologist.

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I tire quickly	①	②	③	④
23. I feel like crying	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I am losing out on things because I can't make up my mind soon enough	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I am inclined to take things hard	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I try to avoid facing a crisis or difficulty	①	②	③	④
35. I feel blue	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I become tense and upset when I think about my present concerns	①	②	③	④

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *feel* right now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
9. I feel anxious	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel "high strung"	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel over-excited and rattled	①	②	③	④
19. I feel joyful	①	②	③	④
20. I feel pleasant	①	②	③	④

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APPENDIX

WEIGHT

It is important to check your weight throughout your pregnancy. A steady weight gain is good. It shows that you and your baby are doing well. You gain weight for many reasons. Organs such as the womb and breasts get bigger. The baby gains weight. The afterbirth grows. There is the weight of the waters. The amount of blood in your body goes up. A good diet is important. Weight gain varies. An average weight gain is 28 to 30 lbs.

URINE TESTS

Your urine is tested at every clinic. The test is a simple one. A small indicator stick is used. This has been specially treated. It is dipped into the urine specimen. It tests for protein and sugar. If the amount is abnormal, it will change colour. If nothing abnormal is found they will write 'N.A.D.' on your card.

BLOOD PRESSURE

Your blood pressure will be taken at every visit. This is the pressure created in the heart. It forces the blood round the body. There are two readings. An upper and a lower number. The upper one is the systolic blood pressure. The lower one is the diastolic figure. Your blood pressure will be taken at your first visit. At future visits a comparison will be made. The tests are to check for no undue rise in blood pressure.

APPENDIX

Questionnaire 1

1. How satisfied were you with your ante-natal visit?	1 2 3 4 5 6
2. How satisfied were you with communications during your ante-natal visit?	1 2 3 4 5 6
3. How satisfied were you with the information you received about your progress?	1 2 3 4 5 6
4. How satisfied were you with the information you received about your baby's progress?	1 2 3 4 5 6

Tests

1. Were you weighed at the clinic?		Yes___ No ____
2. What was your weight?	I am not sure	____
	It was	_____ (stone/lb/K
3. Did you have a urine test?		Yes___ No_____
4. What was the result?	I am not sure	_____
	It was	_____
5. Did you have your blood pressure taken?		Yes___ No____
6. What was the result?	I am not sure	_____
	It was	_____

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *feel* right now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
9. I feel anxious	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel "high strung"	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel over-excited and rattled	①	②	③	④
19. I feel joyful	①	②	③	④
20. I feel pleasant	①	②	③	④

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